

# Contents



Sea Sled express cruiser designed by Albert Hickman and built by Murray and Tregurtha. This craft is 38 feet in length by 8 feet beam, and is driven by a pair of eight-cylinder  $5\frac{1}{2}$  x 6 Van Blerck motors. On her first trial she showed a speed of 34 miles per hour.

Photograph by Stebbins

## June, 1916

Are Yachtsmen Patriotic?.....	7-8	Choosing the Proper Power Plant.....	23
Where Shall We Cruise This Summer? No. 6—The		<b>Prize Contest in Questions and Answers:</b>	
Maine Coast.....	9-10	Helping Uncle Sam.....	24
Aquaplaning—A Novel Sport.....	11	The Inexpensive Lighting Outfit.....	25
Express Cruisers for Our Country's Defense.....	12-13	Making a Unit Power Plant.....	28
Express Cruisers Establish a New Epoch in Motor		<b>American Marine Motors:</b>	
Boating.....	14-15	The Type QM Wisconsin.....	30
Two of This Season's Dark Horses.....	16	Van Blerck Aeroplane Model.....	30
John McCormack's Express Cruiser.....	17	Enter the Counterbalanced Shaft.....	31
Two Great Lakes Craft.....	18	Kerosene Motor Has Try-Out.....	31
New Expresses from Stamford.....	19	Racing Stunts and Novel Handicaps.....	32
Kingfisher, a Hand Express.....	19	New Things for Motor Boatmen.....	33-34
Approved by the Navy Department for War Service....	20	From MoToR BoatinG Readers.....	35
The Thirty-Six-Foot Cruiser Estelle.....	21	Important Racing Events in June.....	36
Three Distinctive Express Cruisers.....	22	Yard and Shop.....	37-39

### June Cover by William de Leftwich Dodge

In the present European war the armed motor boat is playing a most important part. Submarine warfare, brutal as it is today, is really mild compared with what it would be were it not for the thousands of submarine chasers which the various belligerent powers are using. The modern submarine has one vulnerable spot and it is much easier for a single 70-foot motor boat to reach this vital spot than it is for an entire fleet of super-dreadnoughts. When the periscope has been hit the submarine is blinded. She must sink or come to the surface. If she comes to the surface it will be some minutes at least before she can get any deck guns into action even if she has any. In the meantime a fast motor boat, properly armed, gets in her deadly work.

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The attention of our readers is called to the fact that the subscription price of MoToR BoatinG has been increased from \$1.00 a year to \$1.50 a year. We have done this because we believe that MoToR BoatinG is worth \$1.50 to every person to whom it is worth anything at all. MoToR BoatinG is not published for the general public, but for a very select class of the public—those who are directly interested in boats and boating, as owners, prospective owners, members of yacht clubs, etc. To these people MoToR BoatinG renders a service whose value can hardly be measured in dollars and cents; we feel very confident there will be none who will say that we are not entitled to the very moderate sum of one dollar and fifty cents for twelve issues. The single copy price will remain the same—15 cents.

June, 1916

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# MOTOR BOATING

THE NATIONAL MAGAZINE OF MOTOR BOATING



Three of the Patrol Squadron boats lying alongside the float at the Boston Yacht Club. These boats are 40 feet in length and are powered with six-cylinder Sterling motors

## Are Yachtsmen Patriotic?

Great Efforts Toward Preparedness Being Made by Motor Boatmen  
The Apparent Lack of Co-operation on the Part of the Government

JOSEPHUS DANIELS, our honored Secretary of the Navy, has at last issued the orders which we have been expecting for nearly a year. Ever since the shocking condition of our country's coast defenses became apparent, motor boatmen from all parts of the country have been volunteering their services and writing to Washington and the Navy Department for instructions as to how they could best serve their nation. Request after request has been made to the proper authorities as to what would be required of the motor boatmen in time of war, what lines they should follow to better prepare themselves to aid the Government, and what type of boat they should build to best meet these requirements. Many of the inquirers wished to know for what service their own particular boat would be best suited, what lines of instruction they should take up and where to get it and a thousand other sane and reasonable queries. Mr. Daniels' reply was always polite, but invariably the same short sentence, "Wait, the Department will announce its plans shortly," and wait we did, and now we motor boatmen are rewarded for our patience.

Mr. Daniels tells us that there will be a cruise arranged for somewhere this summer, but where he doesn't tell us. He goes on further to state that if we

are a college graduate or a plumber, we can attend if we have the price. Of course, the Government must not be compelled to pay for the food we might devour on this three weeks' trip, or for the other incidental expenses connected therewith,



The four owners who have built the Patrol Squadron boats to demonstrate to our Government the possibilities and usefulness of the high-speed cruiser in time of war

such as the paint worn off the deck while we are on watch or the soap we use if we shave; in fact, there must be no expense of any character to the Government. Mr. Daniels says that if we happen to live several hundred miles from the embarking or disembarking port we must take that into consideration, for the railroads must declare dividends, you know. For any risk we take it is up to us, and we must sign a hard and fast agreement not to hold our Government responsible for anything. In short, this great big rich Government of ours is not willing to pay anything even toward our expenses, although we must give up nearly a month of our time in an effort to prepare ourselves to be a real service to our country should it need it, and even Mr. Daniels knows it will, should occasion arise. But that is not all.

What are we going to learn on this cruise, what subjects are we going to study, and what instruction are we to receive? These are some of the questions we were told would be answered when the gentleman spoke. With our knowledge and love of the sea are we going to be taught the rudiments of duties of officers, or are we going to be relegated to the stokehold for a three weeks' course of instruction? Mr. Daniels did not forget his promise to tell us of the duties we will have to perform while aboard.

His schedule of the daily routine consists of sixteen acts, including turning out at 4 A. M. and retiring at 9 P. M. and three meals a day. This leaves

Capt. Hermann Oelrichs, who will serve as a member of the crew on one of the Squadron Boats until his new 70-footer, powered with two 400 h.p. motors, is completed



Two of the Patrol Squadron

Above photographs by Stebbins  
boats under way at 25 m.p.h.

eleven daily duties to be accounted for, and seven of these consist of either lighting or putting out the smoking lamp. The schedule for 5:20 A. M. calls for "off shoes and socks" so as to be ready at 5:30 A. M. "to scrub and wash clothes." A rather attractive schedule to arouse the interest of the great army of motor boatmen in the Navy, which, Mr. Daniels says, is one of the objects of the cruise.

Now we come to the most interesting part—the training cruise for motor boats which will form a part of the civilians' cruise. You are invited to come along and participate in this cruise which is scheduled for the fourth week of the cruise proper, especially if you have the type of craft which will do for a patrol boat. For this you will need a ship of not less than 65 feet in length, but if it is nearer 100 feet it will be better. Speed is immaterial; anything over 30 miles an hour will do. The Department does admit it may be a little off in its figures so it is willing to accept temporarily, for a limited patrol service, boats having a speed of not less than 25 miles per hour and not less than 45 feet in length. Other craft, of a

(Continued on page 54)  
Capt. Frederick  
Humphries,  
owner of P. S.  
No. 3



Stuart Davis, commander of the Patrol Squadron, in the forward cockpit of his flagship No. 2



# Where Shall We Cruise

## This Summer

### No. 6 - Massachusetts Bay

Photographs by Stebbins

By George Story Hudson

Marblehead harbor in summer

**Y**ACHTSMEN bound to the coast of Maine should tarry in Boston Bay, touching at interesting places visited infrequently by "foreigners." By that I mean the fellows who take a departure somewhere in Long Island Sound, traverse the Cape Cod Canal, then make a broad jump for Portland, Boothbay Harbor or, perhaps, Bar Harbor, eventually rushing back home. Better make haste slowly when in the vicinity of Boston because the going is easy and prominent clubs display welcome shingles.

Distances are relatively short after quitting the canal, harbor entrances are broad and shelter is at hand should wind and sea get unruly. One voyages so near shore, from buoy to buoy, that the veriest tyro ought not to encounter difficulties. It would be a nimble fog mull that caught him napping provided he used half an eye. Sometimes the prevailing south-westerly hand out mist thicker than a Scotia cook's plum duff. Easterlies, too, have a habit of dropping a gray blanket as a tonic to the well-found fellows. And the experience most likely will not be dreadful, anyhow.

Canal navigation is simple after the launches Traffic and Patrol have come alongside with instructions as to speed, meeting points, and a few other things essential to safe conduct. You pay as you enter, handing over the receipt to the collector at the other end.

He's a good-natured chap, this collector, and it will seem as if you are making him a present instead of proving yourself square with the company. You may go through the canal with a fair tide or buck it according to circumstances and, when working the foul tide, there's small chance that you will exceed the speed limit. No doubt there'll be other vessels bound your way, for the canal is handling considerable business. Yachtsmen of my acquaintance who are thoroughly reliable declare canal navigation to

be as easy as rolling off a log, and I have made the passage without a particle of the prickly sensation commonly associated with fright. There are no locks that control the tides, and the only bridge to be considered is the railroad structure at Buzzards Bay and that will be opened in ample time if a boat carries a mast or high tophammer. So there you are.

Rounding the canal breakwater jutting into Cape Cod Bay, one may see, on the port bow, Manomet Point, a chopped-off hill that stands with feet amongst boulders. Mary Ann Rocks buoy is off this point and the buoy is seven miles from the canal jetty. The character of the coast has changed since leaving Buzzards Bay into rugged upland and bunches of pitch pine and oaks. Also the mosquito that lurks about Onset, Monument Beach and Wareham acts as if it has forgotten to jab with customary ferocity. Another seven miles from Manomet Point brings you to the Gurnet, at the entrance to Plymouth. Naturally, if bound in, you will shape a course from the sea buoy into the dredged channel where ocean freighters come with cargoes of sisal.

Without doubt you have aboard a chart of Cape Cod Bay as well as large scale charts of the harbors. Sailing directions for every inlet boasting a few feet of water are set down in Part III of the U. S. Coast Pilot, published by the Coast and Geodetic Survey. This volume

embraces the section of the coast between Cape Ann and Point Judith (more familiarly known as "Jude"), and is extremely handy for reference. Like all of these valuable works published by the Government, it gives sailing directions, the character of the waterways covered, and brief descriptions from the mariner's point of view of the important towns along the coast. For the whole cruise here described one may steer by headlands just as some skippers of coasting



Boston Lightship

schooners do the trick when they have no deviation card or when the compass has lapsed from its sense of reliability.

Leaving Plymouth and its attractions, the tower of Minots Light commands the easterly seascape and the radio spider at Brant Rock dominates the shore. Now and then spray dims the lantern at Minots—but not in summer. The lighthouse rises from solid rock with myriad rocks in the vicinity, the outlying danger being Davis Ledge, marked by a buoy which one must leave on the port hand to be sure of a peaceful mind. Inshore are Scituate and Cohasset, each with its harbor, and the North River Inlet is not far distant. Local knowledge is needed to navigate between Minots and the shore, so steer for Boston Light,

under the Ave. Bridge venient to Station. An- ing, at War- is near the tion, and the the Navy busy steam- nals. At

Northern being con- the South other land- ren Bridge, North Sta- route passes Yard and ship termi- Warren

popcorn and diamonds. Perhaps you are a stickler for the Bristol fashion in navigation and prefer the route by way of the lightship. From the lightship to Nahant is a short ten miles, and some skippers argue it to be a waste of gasoline to make this extra mileage when, by Broad Sound, Nahant is only four miles from Boston lower harbor. From the lightship to Marblehead is ten miles stiff going when the wind is on shore. Speaking of Nahant, perhaps you ought to drop in there. Most yachtsmen anchor near Bass Point, where there is a float adjacent to the steamboat landing. The water here is fairly smooth except in strong southerly winds. Close at hand is the Saugus River, where the famous Houp-La and other fast cruisers were built by Britt Bros. Across the bay

Above: Historic Minots Ledge Light

seven miles, keeping Hard- ing Ledge buoy and the Allerton beacon on the port hand. The lightship is stationed six miles easterly of Boston Light on the road for ship- ping bound round Cape Cod, or from the canal to Marblehead and beyond. Scituate and Cohasset, I may add, ought not to be stricken from a cruise itinerary on account of the foul bottom shoreward of Minots. The approach as marked by buoys is safe in both cases.

When Boston Light is abeam there's much from which to choose within a short distance. Ahead is Georges Island, topped by Fort Warren. To port is Hull, entered by a gut with deep water and strong tide. Rounding Windmill Point one has but a few minutes to go before reaching the handsome house of the Boston Yacht Club, fronting an excellent anchorage. One may attack Nantasket Beach, a sort of Coney Island, from the rear by poking three or four miles along a steamer channel. Dorchester Bay, nearer the Boston wharves, is accessible at all stages of tide by way of the main ship channel, or the West Way. This locality is famed as a yacht anchorage, an average of 400 vessels having moorings there. Fuel, water and provisions are in abundance; several prosperous yacht clubs front the Strandway and street cars shuttle between City Point, where the landings are, and Boston proper, a twenty-five-minute jaunt.

Should you wish to explore the upper harbor, make use of the public landings, the one

Bridge a man in charge of a private float no doubt will look out for your boat should you decide to stretch your legs a bit. Beyond Warren Bridge lies the Charles River and delightful stretches navigable for small craft.

Leaving Boston for the eastward, the almost universal route is via Broad Sound mid- way between Graves Light and rock-bound Nahant, a resort that runs the gamut between

At the left: Egg Rock off Nahant, Mass.

is Revere, an amusement place of considerable pretension, handy to the float of the Bay State Yacht Club. The Lynn Yacht Club and kindred organiza- tions at Lynn may be reached by way of the ship channel or Black Rock Channel, a short three miles. Here is a landing stage, an anchorage basin, a populous beach and the bustling city.

Resuming the cruise, a crescent of sand is sighted after rounding East Point, Nahant. The chart will tell you that the place is Swampscott with practically no harbor in easterly winds. Swampscott is the home of the sailing dory, and a hundred of the weatherly little boats may be seen hauled up on the beach or at moorings when the day's work of the fishermen is done. Off Swampscott rears Egg Rock, a crag surmounted by a lighthouse which serves as a special aid to shipping, bound to and from Boston. One's first glimpse of

Marblehead in clear weather is the tower of Abbott Hall in the town proper. Houses on the Neck gradually come into view as the boat reels off the miles, and a depression in the coast line is noted as the strip of road connecting town and Neck, the latter being a buffer between harbor and ocean.

Tinker Island, which looks to be part of Marblehead Neck, is the most enterprising of a group of islets marked by the Outer Breaker bell. Passing Tinker one sights Marblehead Rock with its quaint pyramid, while, a bit inshore, stands Tom Moores Rock with its feet in the swash. Off Lighthouse

(Continued on page 51)

Hull station of the Boston Yacht Club



# Aquaplaning —A Novel Sport

By W. M. Angas

JUDGING by the many excellent photographs of aquaplanes which have appeared in MoToR BoatiNG, during the last couple of years there is a rapidly growing interest in this newest and most thrilling of water sports. It seems, though, that in most cases the planes which have been shown in the pictures are heavy



It is a game that two can play, but it's not as easy as it looks



As the number of riders increases so does the sport

and clumsy affairs, and the following description of a plane I have seen used in Florida may be of interest to enthusiasts.

The outfit was developed by a crowd of young fellows during a summer spent on cruising boats in southern waters, and the finished product is the result of some simple experiments, and several trial planes. As the photographs show, the plane is about eight feet long and not over two feet wide. It also differs from the ordinary plane by being thin and

Standing on one's head is the most difficult feat of all. It involves a certain difficulty in breathing



"whippy," its flexibility making it a much more thrilling proposi-

tion to ride than the heavy, rigid planes commonly in use. It is also much easier to tow than the rigid type of plane, because of the greater weight of the latter type, and it naturally follows that it can carry two, or even three, riders almost as easily as the heavy planes can carry one.

The aquaplane itself is made of half-inch cypress boards which run fore and aft and are screw-fastened to thwartship battens of the same material. The forward end is pointed, and its edge is beveled in order to discourage diving. Towing is done by a rope fastened directly to the bow of the plane, and not by the usual bridle which makes steering almost impossible. For the use of beginners, and also to aid in doing stunts, a single "rein" of soft cotton rope is attached to the bow. This rope is knotted at about every foot of its length in order to give a good hand hold.



A haughty spirit oft goeth before a fall

The plane is ridden in the usual way. The rider, or crew, lies on the after end of the aquaplane, and when sufficient speed has been attained to bring the plane to the surface, stands up, and if sufficiently skillful drops the reins or begins some trick work. Towing straight (Continued on page 51)



Bronco busting has nothing on the stunt of sending her out through the wake

# Express Cruisers for Our Country's

**Motor Yachtsmen Urged to Form Volunteer Torpedo Patrol for Possible War Service  
Owners Need to Make Their Commands Truly Valuable—Some of the Newest High-**

**By Nevil Monroe Hopkins, M. Sc., Ph. D.**

IT was in the summer of 1898, during the war with Spain, that the writer assisted that expert in high explosives, Prof. Charles E. Munroe, the eminent inventor of Indurite and other military smokeless powders, in organizing a volunteer torpedo corps for practice with submarine mines upon the Potomac River, and in drills and tactics for the defense of the city of Washington.

This corps when organized consisted of about fifty men who received theoretical instruction and practical training in military signaling, in the handling of explosives, in the study of certain electrical instruments, in mining and countermining and in the manual of arms. The work was so successful at that time that a similar movement is being agitated at present upon a much broader and more comprehensive scale.

Prof. Munroe, who will again volunteer his services for instruction, was formerly chief chemist of the Naval Torpedo Station at Newport, R. I., and professor of chemistry at the United States Naval

Academy, and is now Dean of the School of Graduate Studies in the George Washington University.

Because of their occupations and other ties many patriotic citizens are prevented from giving their time and latent talents to general service in the Army or Navy, or to any branch of the Militia. These citizens could, however, without undue hardship, and with much pleasure, devote sufficient time each day in the vicinity of their homes and business to receive instruction and to acquire actual practice in certain important fundamental arts and sciences, making them of decided military value to their country in time of war. Especially is this true for the type of men who know and love the water, in view of the development of submarines and their increasing menace. The strides made in the art of submarine navigation and warfare, and the tendency to build submersibles of greater and greater size and radius of action, certainly call for every effort at this time to find adequate

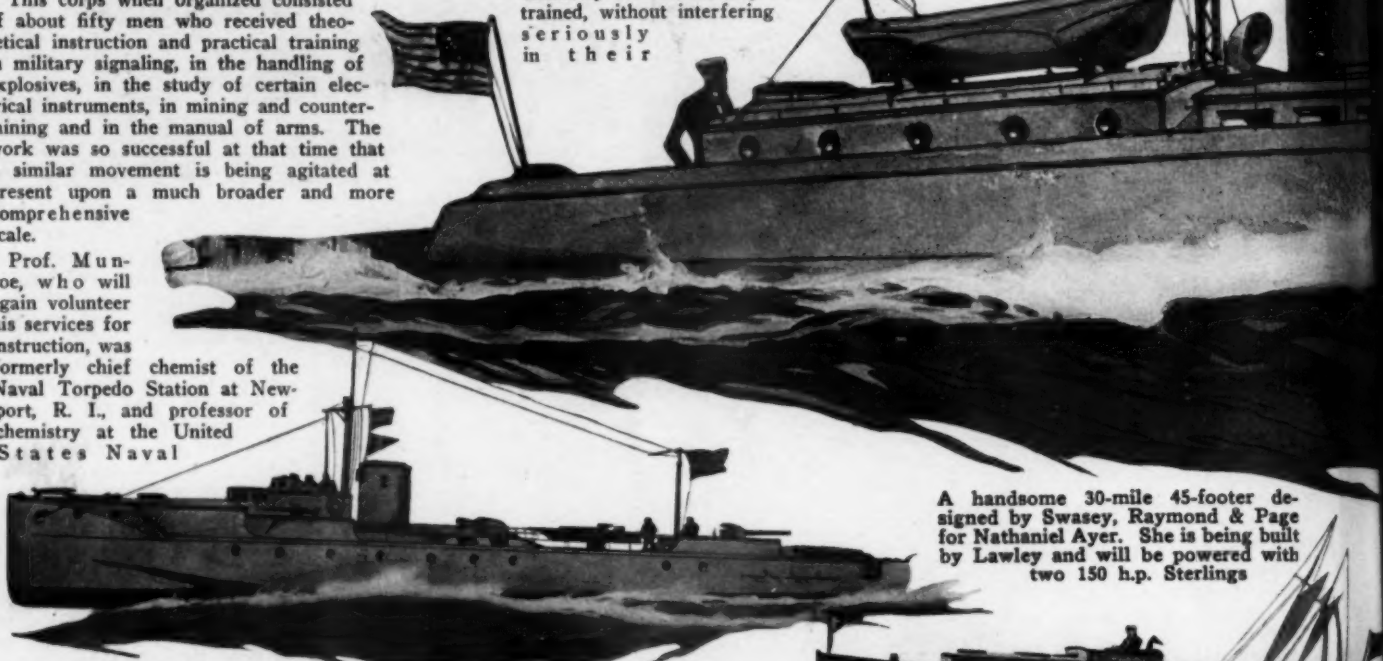
means of offense and defense against such vessels. There are today in the United States, outside of West Point, many excellent schools for the training of men in the making of reserve Army officers, for both special and general duty. There are, however, no adequate parallel courses of instruction outside of the United States Naval Academy where men may be trained, without interfering seriously in their

routine of life, as reserve officers for duty on the water. Especially is this true for the training of men with fast motor boats and yachts for such duties as mine and torpedo work and for instruction in the arts of submarine offense and defense.

The British have inaugurated a patrol fleet of merchant boats and fast yachts equipped for submarine defense, but upon the sudden insti-

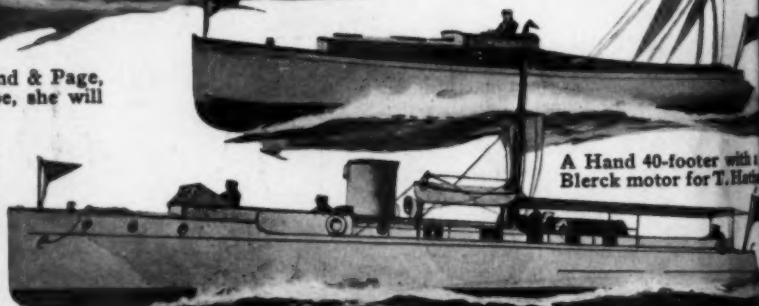
tution of active submarine warfare there was no time for the training of their commanders and crews to fit them for this new art. The British have

—An Outline  
Speed Cr



A 90-foot steel express motor yacht designed by Swasey, Raymond & Page, as she would look in war trim. Of the new wave-collector type, she will make 45 miles with 1,600 h.p.

A handsome 30-mile 45-footer designed by Swasey, Raymond & Page for Nathaniel Ayer. She is being built by Lawley and will be powered with two 150 h.p. Sterlings



A Hand 40-footer with a Blerck motor for T. H. H.



A 74-foot Swasey-Lawley express for T. A. Howell. Her two 120 h.p. Speedways will drive her 20 m.p.h.



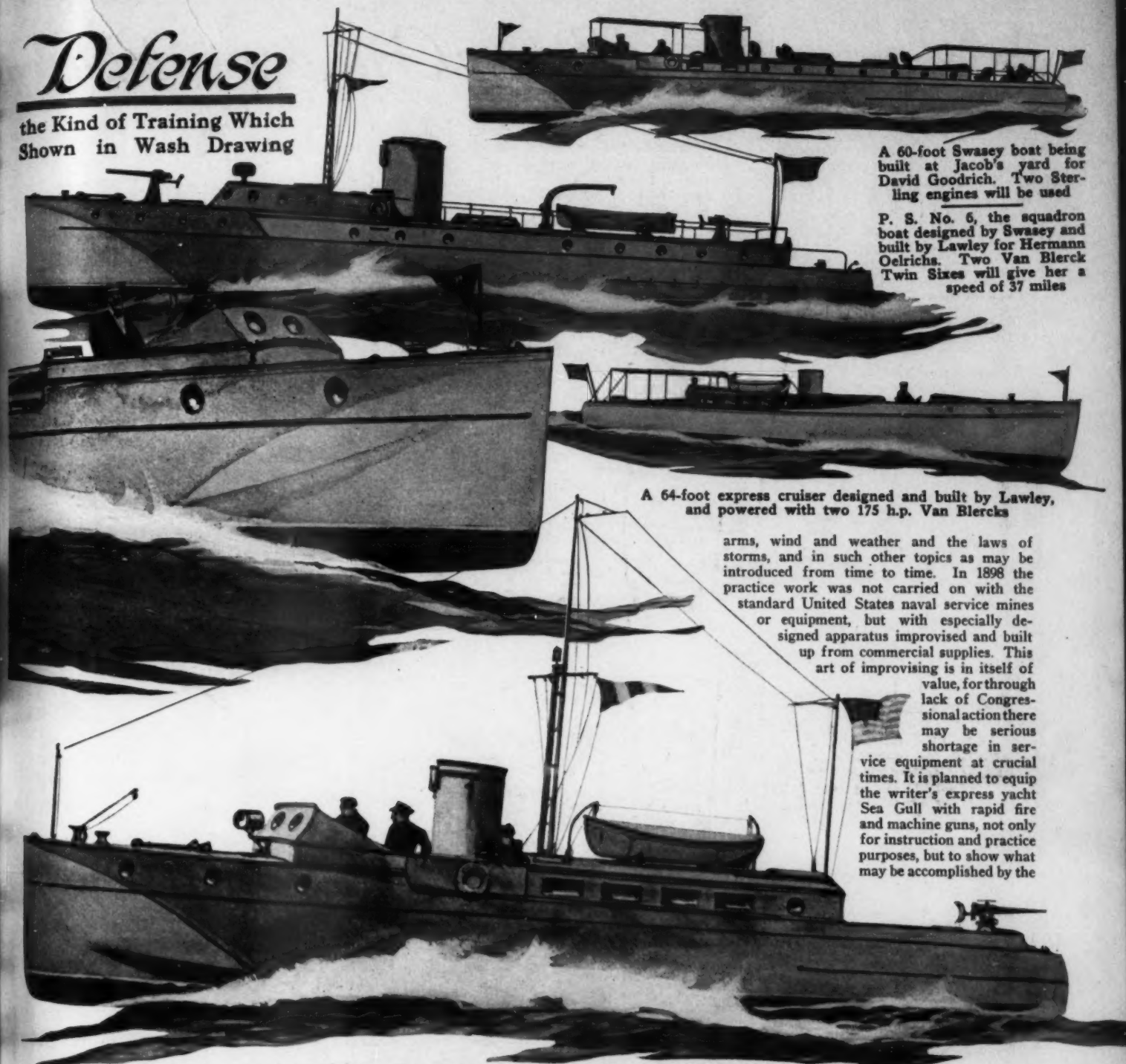
Inquirer, a 62-foot Swasey boat building at Mathis yards for Col. J. Elverson, Jr. Equipped with two 400 h.p. Duesenbergs, she will show a speed of 37 miles

Albion, a Lawley vessel built for Arthur E. Dowler. She is 67 feet in length and is powered with a 100 h.p. Winton



# Defense

the Kind of Training Which  
Shown in Wash Drawing



A 60-foot Swasey boat being built at Jacob's yard for David Goodrich. Two Sterling engines will be used

P. S. No. 6, the squadron boat designed by Swasey and built by Lawley for Hermann Oelrichs. Two Van Blerck Twin Sixes will give her a speed of 37 miles

A 64-foot express cruiser designed and built by Lawley, and powered with two 175 h.p. Van Blercks

arms, wind and weather and the laws of storms, and in such other topics as may be introduced from time to time. In 1898 the practice work was not carried on with the standard United States naval service mines or equipment, but with especially designed apparatus improvised and built up from commercial supplies. This art of improvising is in itself of value, for through lack of Congressional action there may be serious shortage in service equipment at crucial times. It is planned to equip the writer's express yacht Sea Gull with rapid fire and machine guns, not only for instruction and practice purposes, but to show what may be accomplished by the

Here is another Swasey-Lawley combination which will attract great attention. John Saltonstall is her owner, and he expects a speed of 25 miles from her two 150 h.p. Sterlings. The length is 54 feet

learned this costly lesson and have now inaugurated a splendid new school upon the Isle of Wight for the scientific training of civilian boatmen in mining and trawling. The time has come also for this country systematically to develop and try out all methods and devices which promise to defeat attacks of the submarine.

It is proposed by a committee of which the writer is chairman to organize divisions of a "Volunteer Torpedo Patrol of the United States," using as the fundamental bases of these divisions, combinations of yachtsmen with their fast yachts on the one hand, and the professors and instructors in engineering schools and colleges on the other. Under this plan the owners of fast yachts, and other water-loving men in connection with their yacht clubs, will furnish the means whereby motor boat and yacht seamanship may be learned; the highly trained men in the scientific faculties of the engineering schools and colleges in the same locality will furnish the

talent and instruction in arts and sciences pertaining to electricity and explosives, marine engineering, wireless telegraphy and other subjects which may be necessary. To give a concrete example for one of these divisions, let us take the yachtsmen and members of the United States Power Squadron at Washington, D. C., with their boats and boat clubs upon the Potomac River, and the graduates in engineering and the corps of professors and instructors of the George Washington University in the heart of the city.

According to the present plan it is proposed to form the "Potomac Division," at Washington, of the Volunteer Torpedo Patrol of the United States, and to give theoretical instruction, as well as practical training, in river and harbor and coastwise navigation, marine engineering, in signaling and in wireless telegraphy. In addition to the subjects already mentioned, training will be included in first aid treatment, mine sweeping and trawling, torpedo practice, the manual of

owners of fast yachts in other waters in time of need for patrol service. This example should also encourage the already existing plan of building fast Government-approved motor yachts which may be converted into patrol boats.

The Navy Department believes in and encourages the construction of motor boats and yachts with a speed of twenty knots and over, and of sufficient displacement to mount one- and three-pounder rapid fire guns. Should sufficient interest be shown in this projected patrol service, it is proposed to accumulate all of the useful data existing for the use of mosquito fleets, and eventually to issue a standard manual devoted to river, harbor and coast defense. This manual could advantageously combine with motor boat and yacht seamanship the proper affiliated arts and sciences of mosquito military engineering. It is evident that this work would stimulate not only the study of all such subjects as the rules of the road at sea, international signals,

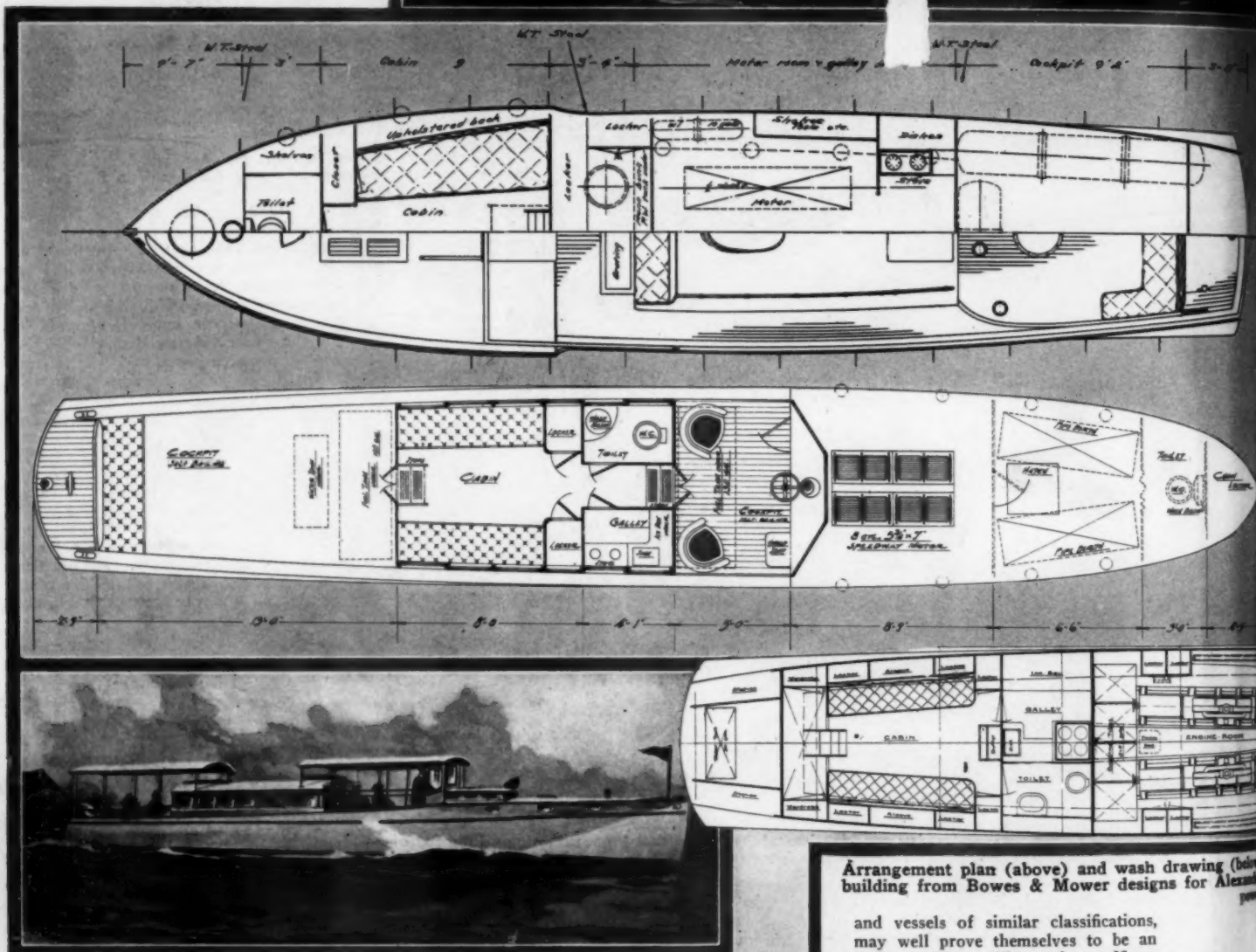
(Continued on page 52)

THE remarkable growth of the express cruiser idea may be traced to a number of sources of entirely different character, and it is hard to say which one has played the most important part in the evolution of this highly useful type of craft. First, there is the success of Flyaway III in her initial races two years ago and the stimulus of her wonderful record last year in the New York to Albany race. Then there is the poor showing made by the crack hydroplanes in their contest last year for the Gold Cup, diverting interest among sportsmen away from this single-purpose type of craft. And finally there is the slow but persistent molding of

vilians on land. That many owners of large yachts should have discarded their older types of craft to take up with the new is distinctly to their credit, and that Lloyd's 1916 Register should include names

Edamena II, a Hand-Lawley 45-footer powered with two six-cylinder Van Blercks. From the wash drawing and arrangement plan (below) it will be seen that the accommodations are particularly good for this type of boat

## Express Cruisers Establish A New



Sonny Bill II, owned by A. Selwyn, will have a speed of 24 miles. Her designers and builders, the Gas Engine & Power Co. and Chas. L. Seabury Co., Cons., will install two 200 h.p. Speedways. The arrangement of her interior is shown in the plan directly above

public opinion exerted by the preparedness movement under the guidance of some of the nation's leading figures.

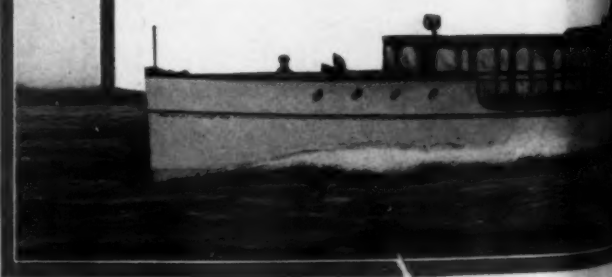
And as the growing interest in cruisers of the express type has a triple origin, so the uses to which it may be put are three-fold. In the modern vessels of this type we have better cruising accommodations than were offered in former "crack" vessels, nearly as great speed as the skippy surface skimmers, so making the cruisers available for racing of a high order, and a means of national defense whose importance far outclasses any measures which could be undertaken by ci-

never before associated with water life is an augury for the well-being of the country which cannot be disregarded.

For while Congress has been dallying with the question of strengthening the Navy—our first line of defense—the naval architects, backed by men who happily combine wealth and patriotism, have been designing motor vessels which should prove an invaluable second or third line. The "Fringes of the Fleet," as Kipling has dubbed these

Arrangement plan (above) and wash drawing (below) building from Bowes & Mower designs for Alexander

and vessels of similar classifications, may well prove themselves to be an indispensable auxiliary of our Navy, and if they do, thanks for their availability will be due to individuals fully as much as to the National Government.





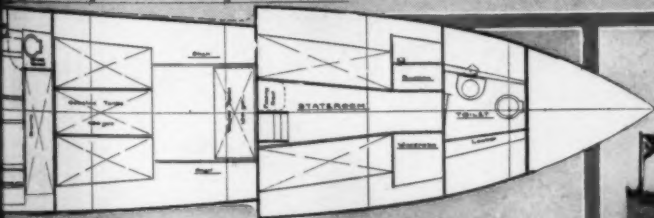
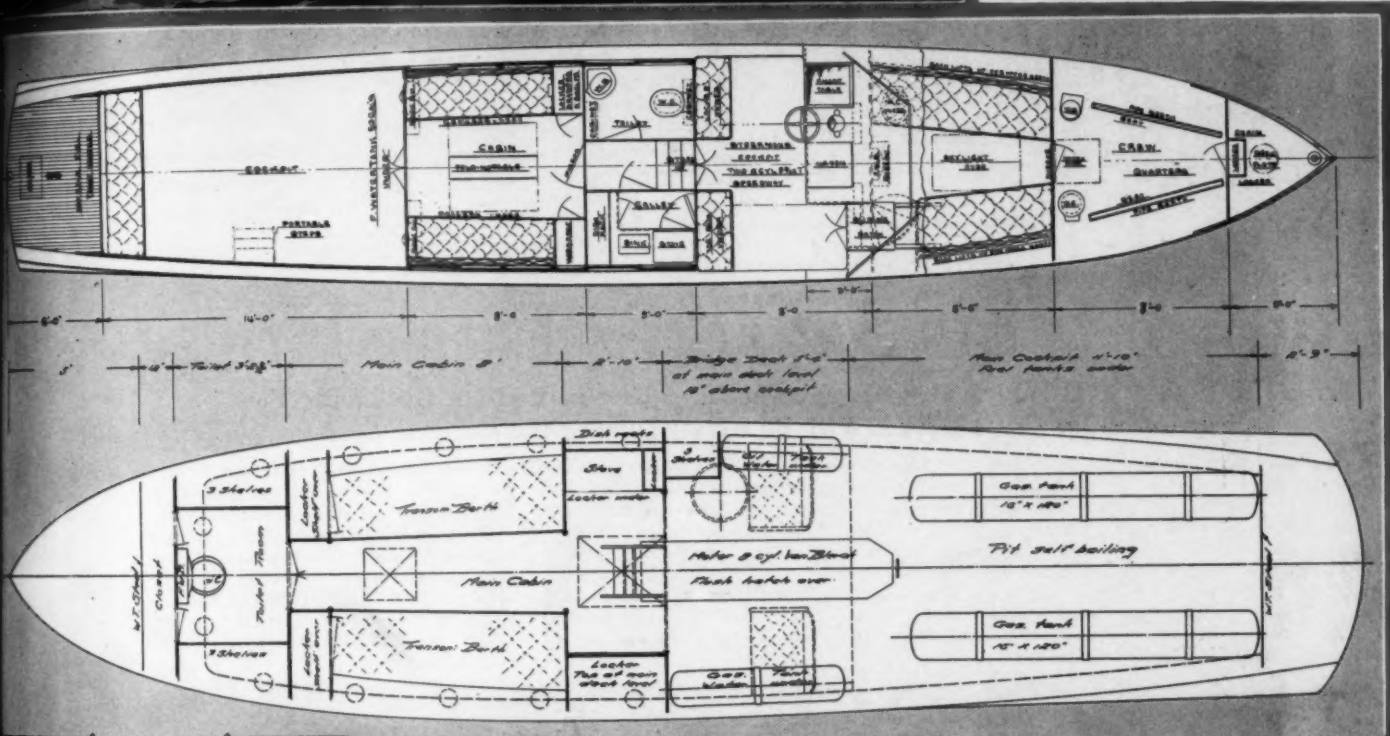
# A New Epoch in Motor Boating

seal of approval on such designs as will prove most useful, both for despatch carrying and for scouting and offensive work against enemy submarines. And, as has lain within its

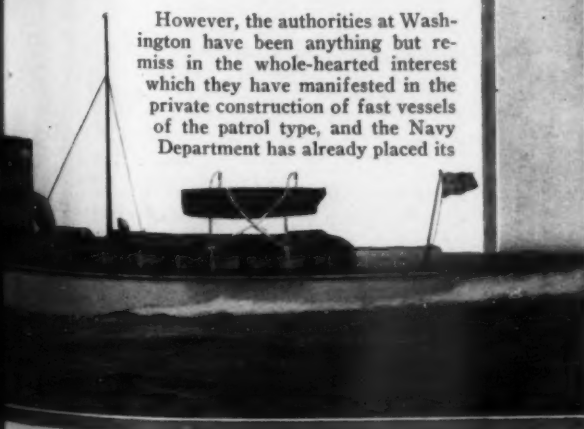
ording to the specifications these boats will have sufficient accommodations for comfortable cruising and will also be strong enough to withstand the recoil of rapid fire guns. The sums offered for them make their building a particularly attractive proposition, and the designers who receive the contracts will have a chance to do their best unhindered work.

Considering now the effect which this new idea in boat design has had on the trade, we find first that the big yards where motor boats of the larger sizes are turned out are busier this year than ever before, and that the number of new boats under construction exceeds that of any spring since the industry came into being. About a dozen of the coun-

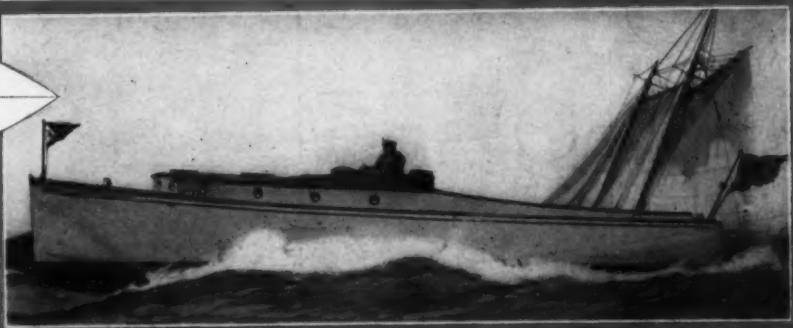
Madge II, a 62-footer designed and built at the Seabury plant for Maj. W. H. Day. A speed of 25 miles is expected from her two 150 h.p. Speedway motors. The arrangement plan below will give an idea of her layout



A 70-footer which the Mathis Yacht Building Co. is building. Two six-cylinder Duesenbergs will form the power plant.



However, the authorities at Washington have been anything but remiss in the whole-hearted interest which they have manifested in the private construction of fast vessels of the patrol type, and the Navy Department has already placed its

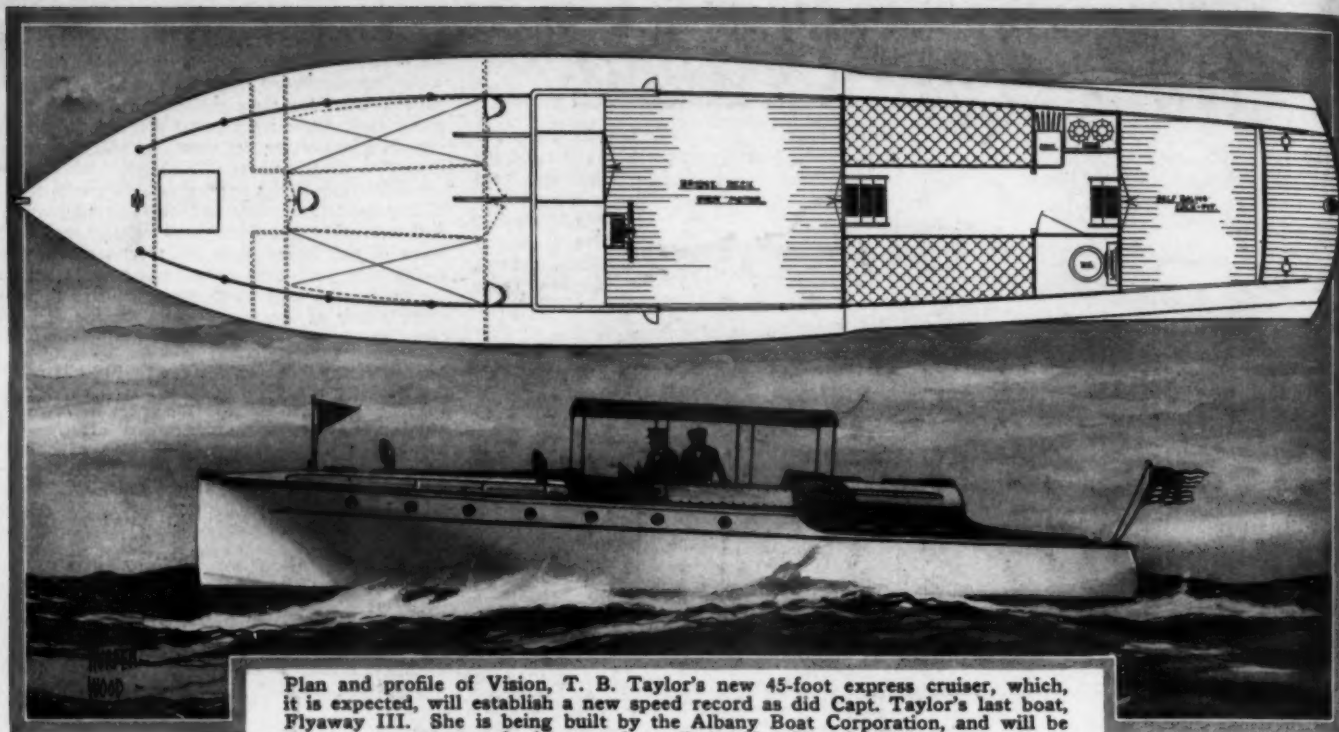


One of five nearly identical Hand V-bottom express cruisers now in process of construction in various yards. Six- and eight-cylinder Van Blercks will be installed and speeds ranging from 23 to 30 miles an hour are expected. The layout is shown above

means, it has ordered the building of motor vessels which will be capable of carrying a torpedo tube and rapid-fire guns, and will be of sufficient speed to show their heels to the swiftest torpedo boat destroyer. In order to give a direct and powerful stimulus to public-spirited yachtsmen to own boats easily convertible for naval use, the Bureau of Construction called for bids on May 15 for the building of a 45-footer with a speed of 25 miles an hour and a 65-footer capable of more than 30 miles. Ac-

try's leading naval architects have devoted practically their entire attention to the designing of super-speed motor cruisers, and several of the prominent engine manufacturers have produced high-speed power plants of capabilities undreamt of a few years ago.

These types are variously specified for the express cruisers illustrated on these and the two preceding pages—a galaxy of motor vessels which gives an excellent idea of the present trend in design, although by the nature of things not nearly approaching in number the modern yachts now built or in process of construction.



Plan and profile of Vision, T. B. Taylor's new 45-foot express cruiser, which, it is expected, will establish a new speed record as did Capt. Taylor's last boat, Flyaway III. She is being built by the Albany Boat Corporation, and will be powered with a twelve-cylinder Van Blerck motor

## Two of This Season's Dark Horses

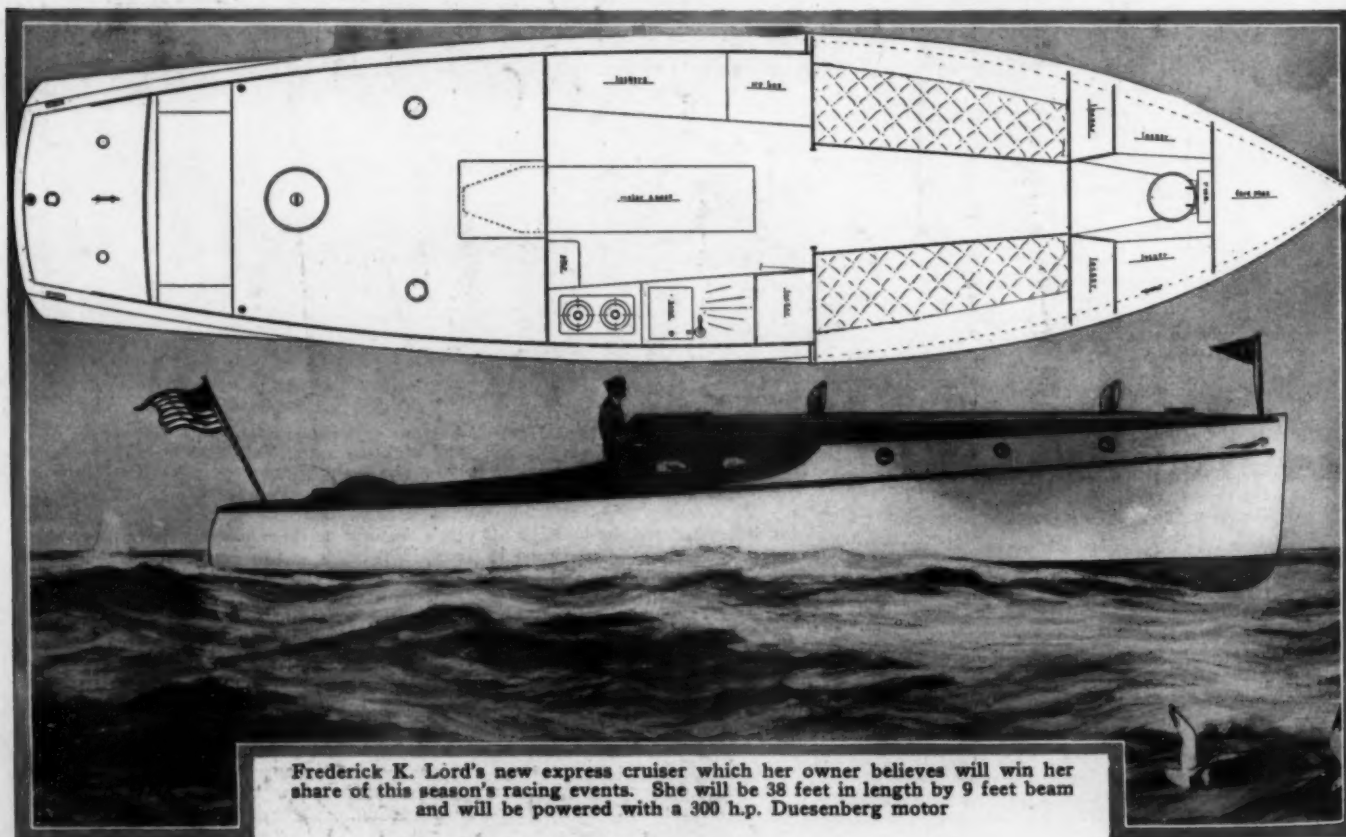
A Sequel to Flyaway III Which Has Set the Pace and Established the Styles for Two Years—  
Two Similar Craft Which Will Be Rivals During the Coming Season

**I**T was Commodore Frank D. Gheen who first conceived the idea of an express cruiser for racing way back in 1909. With his Kitchinque, a 40-footer with a 100 h.p. motor, he proposed to win the classic Marblehead race on speed alone, although he had to allow his competitors hours and hours of time allowance. Kitchinque would have succeeded, too, had not faulty motor installation been responsible for back-firing which

set free gasoline in the bilge on fire. As the result Kitchinque had to be abandoned in Vineyard Haven Sound, but with the race only half over she was nearly ten hours ahead of her nearest competitor. Commodore Gheen's ideas were about five years ahead of the industry. At that time there were no motors in existence which would give the service. However, his plan was the right one as developments this year show.

From 1909 to 1914 there was little or no development in the express cruiser, but in 1914 Flyaway III made her appearance.

The year 1915-1916 has shown a decided development. There are upwards of one hundred express cruisers building for this season's use. In 101 of these, of whose power plants we have records, there is to be installed a total of 21,562 horsepower, an average of over 200 h.p. per boat.



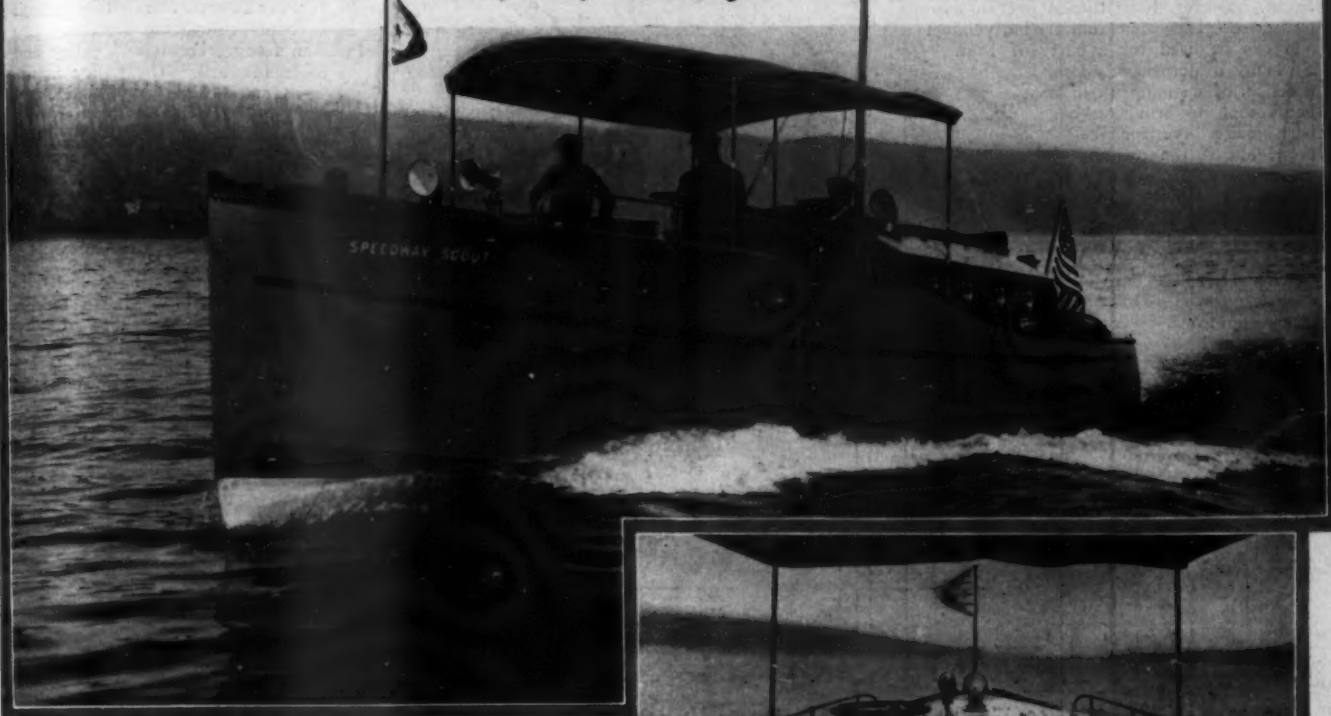
Frederick K. Lord's new express cruiser which her owner believes will win her share of this season's racing events. She will be 38 feet in length by 9 feet beam and will be powered with a 300 h.p. Duesenberg motor



# John McCormack's Express

Speedway Scout, the 43- Footer Which the Noted  
Added to His Fleet— Roomy Day Cruising

Tenor Has Recently  
Accommodations



On her trial trip Speedway Scout gave excellent satisfaction to her builders

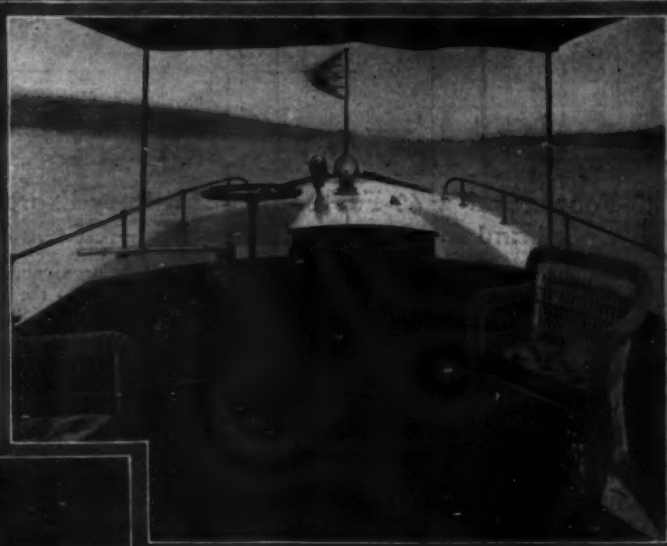
FROM all reports the first pleasure craft to go into commission this season was Speedway Scout, which was launched during the latter part of March. The builders, the Gas Engine & Power Co. and Chas. L. Seabury & Co., Cons., of Morris Heights, New York City, sold this boat to John McCormack, the noted

tenor, after a very successful trial trip on the Hudson River. Last year Mr. McCormack purchased one of the well-known Speedway runabouts and enjoyed motor boating so much that he has added Speedway Scout to his fleet. This craft was exhibited by her builders in the recent New York Show as

a suggestion to the motor boat and yachting world in a new class of express cruiser. The general appearance of the boat—the long straight lines, the low trunk cabin with port lights and gray topsides—bespeak the trend of the times—preparedness. However, just at the point where these naval features are overdone in a great many designs, where miniature torpedo boat styles detract from the cruising attractions, the design of Scout holds firmly to the yachting lines.

Pullman berths in the after cabin give accommodations for two persons, and two more are provided for in the forward stateroom. The galley is arranged on the starboard side just aft of the bridge deck

tion, service and speed being of first importance. In some of the new designs which are termed scout boats,



The boat is steered and controlled from the bridge deck, beneath which the motor is installed. The boat is of heavy construction and weighs from 10 to 20 per cent. more than the average express cruiser



yachting features are made subordinate to naval appearance. Naturally there are people who, for the sake of speed, sacrifice the comforts of yachting, but the perfect combination of cruisability and a fair speed is a fine one. The builders of Speedway Scout claim to give an ideal boat with comfort for cruising and a practical high speed for her class and length.

Express cruiser is the term commonly used to cover this class, although many of the craft listed under it are seventy-five per cent. express and the balance cruiser. The aver-

age up-to-date 45-foot, 10-mile cruiser has accommodations for four persons in separate berths with the crew provided for in the engine-room. Many people in their first observation of the boat under consideration put her in this class, for the usual express cruiser of this length has accommodations for only two in the owner's party and space for a crew in the engine-room. The designers of Speedway Scout, however, have turned out an express cruiser with two cabins that are independent and can be used for a party of four. So many owners have adopted the practice of running their own boats that no provision has been made here for the crew, but if the owner of this type of boat desires to ship paid hands for running it they can be easily accommodated by giving over the forward cabin to them, and this arrangement will not infringe on the privacy of the owner's party aft. This,

however, is not the intention of the design as it is a day boat primarily, with sleeping accommodations added for good measure. The boat has rightly been called a week-end proposition.

As may be seen from the illustrations Speedway Scout is laid out with a short raised deck cockpit

laid out with a short forward followed by a amidships. Next aft is

a cabin trunk and following this is a short after deck or self-bailing cockpit. Under the raised deck is a stateroom with transom berths for two, and separated from it by a swinging door is a toilet equipped with folding wash basin, lockers, etc. The motor, a six-cylinder 60 h.p. Speedway, is installed under the forward cockpit, and fuel tanks with a capacity each of 56 gallons are arranged on either side.

The trunk cabin is entered from either cockpit and is a roomy compartment having two Pullman folding berths and galley and toilet forward. The galley is arranged on the starboard side and is equipped with a two-burner alcohol stove, sink, ice-

box, etc. The after part of the main cabin is given over to two full-length lockers.

A thwartship transom of lazy-back design is installed in the after cockpit. The boat is 43 feet in length by an extreme beam of 9 feet and a draft of 3 1/4 feet.



Speedway Scout shows a speed of 16 1/2 m.p.h., and with a more powerful motor is capable of 20 miles or more

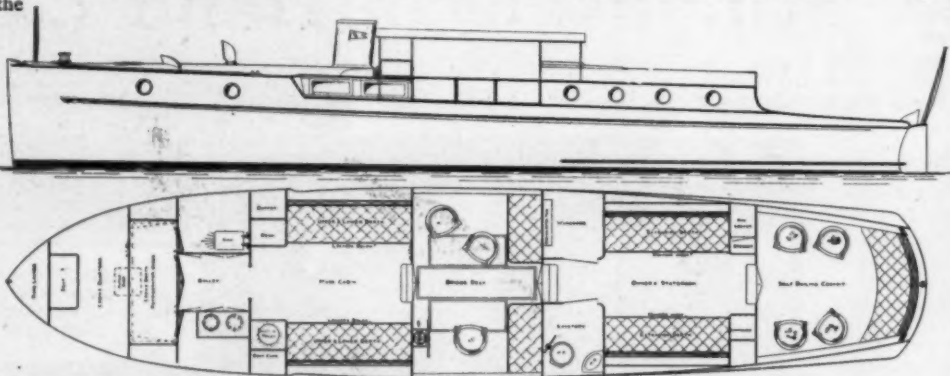
## Two Great Lakes Craft

**A 48-Footer and a 40-Footer of the Military Express Cruiser Type Which Have Been Evolved for Speed and for Comfort in Cruising—Of the Two-Cabin Type With Motor Amidships**

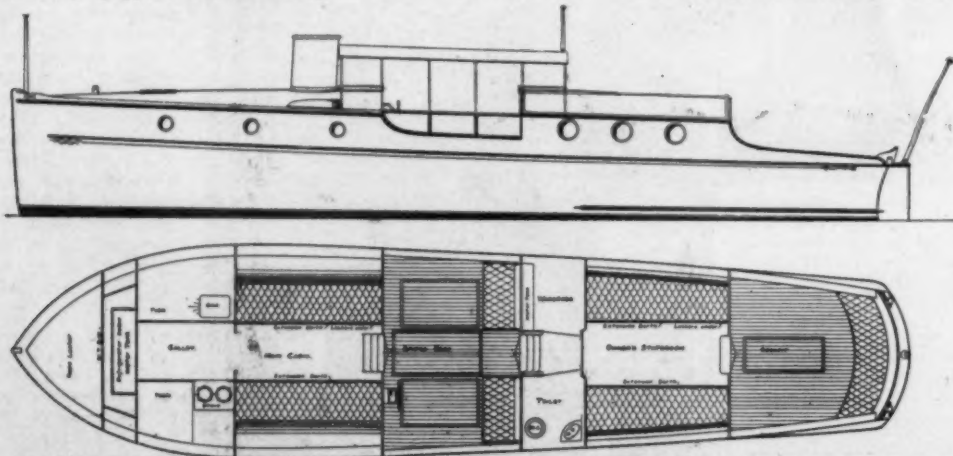
**T**HE Great Lakes Boat Bldg. Corp., of Milwaukee, Wis., has specialized on the building of express cruisers of the military type and has a great many models in various lengths to its credit. Of these, the 48-footer and the 40-footer which are shown in the accompanying plans (which plans, by the way, are patented), are of particularly happy conception. The 48-footer, while not exceptionally fast, comes into the express cruiser class with a speed of 15 m.p.h. Her accommodations are unusually complete and comprise comfortable sleeping arrangements for six in two cabins with additional facilities for the crew in the forecabin. The engine is installed under the bridge deck amidships and the galley is placed ahead of the forward cabin, being of good size and fully equipped. The self-bailing

cockpit aft is large enough for several deck chairs in addition to the fixed transom. The

beam is 10 feet and the depth 2 feet 8 inches. The 40-footer is quite similar in design to



In addition to sleeping accommodations for six the 48-foot Great Lakes military cruiser makes provision forward for the crew



Partly owing to the large beam of 10 feet it has been possible to provide comfortably for a cruising party of four in this 40-footer

the larger boat although its fewer inches make necessary the elimination of the crew's quarters. The owner's cabin aft, however, which is entered either from the cockpit or from the bridge deck is of good size and is provided with toilet and wardrobe conveniences. The main cabin where the owner and his guests will take their meals is situated forward under the raised deck and is arranged immediately adjacent to the galley. In this boat, as in the 48-footer, the motor is installed under the bridge deck.

Among recent express cruisers turned out by this concern are a 31-footer and a standardized 36-footer, both of which have met with unusual success. One of the latter length has been sold to J. C. Wright, of Roanoke, Ala., is named Camp Palms, and is shown on another page.



# New Expresses From Stamford

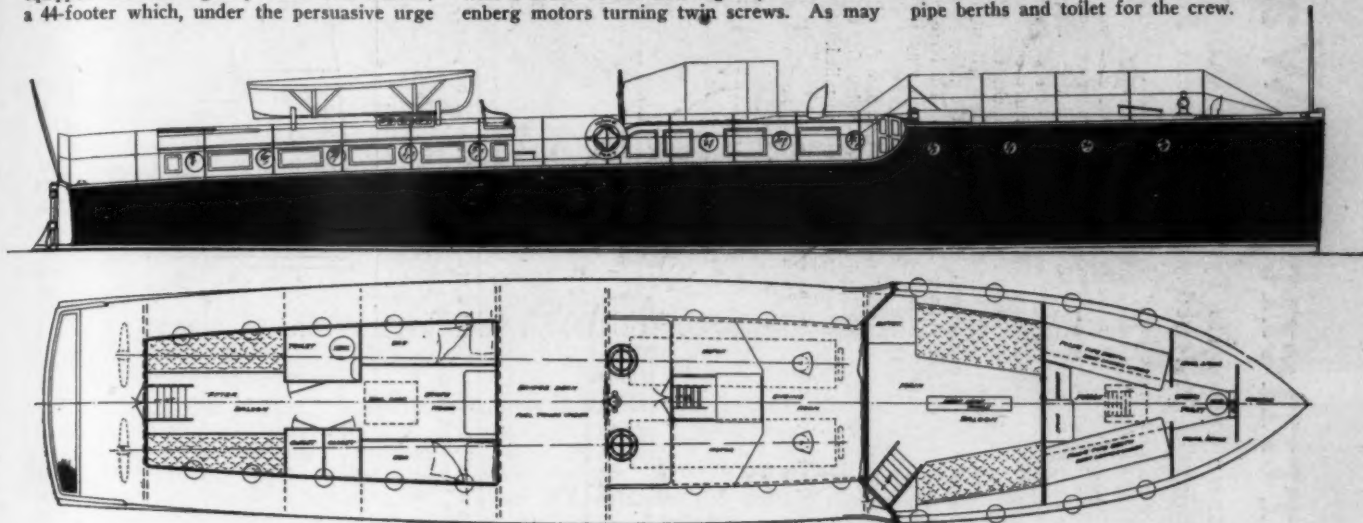
The Luders People in the Sound Port Busy Turning Out Fast Cruisers of All Lengths—New 60-Footer Building Which Will Be Powered With Two High-Powered Motors

THE sound of the hammer and the saw up in the yards of the Luders Marine Construction Co., at Stamford, Conn., gives the casual passer-by positive indication that work there is being rushed to the limit. Among other boats building at the time of writing are a 36-foot express cruiser with a guaranteed speed of 27 m.p.h., which will be equipped with an eight-cylinder Van Blerck; a 44-footer which, under the persuasive urge

of a six-cylinder Van Blerck, will make 20 miles; a 55-footer to be powered with a six-cylinder Duesenberg motor, which will give a speed of 24 miles, and the 28-miler shown in the accompanying plans.

This express cruiser has a length of 60 feet by a beam of 12 feet and differs a little from her sisters in that she will be powered with a brace of the new eight-cylinder Duesenberg motors turning twin screws. As may

be seen from the plans the motors are installed in a compartment of their own in which headroom is not restricted by the bridge deck. This deck comes, instead, immediately aft of the engine house, and the space beneath it is used for the storage of fuel. A comfortable dining saloon is provided forward and the owner's stateroom and lounge are aft. The forecabin is equipped with pipe berths and toilet for the crew.



In this new 60-footer the crew's quarters and galley have been merged into one compartment forward, aft of which is the main saloon. The owner's living quarters are aft and the two eight-cylinder Duesenbergs are mounted amidships

## Kingfisher, a Hand Express

A New 60-Footer Now Under Construction at Lawley's Which Will Be Used Around Block Island for Tuna Fishing—Built-In Fish Box With Scuppers Draining Directly Outboard, a Feature

NEARING completion at Lawley's yard there is a very attractive express cruiser designed by Wm. H. Hand, Jr., of New Bedford, Mass., for J. M. Goetchius, of New York City. This boat is of the well-known Hand V-bottom type, of most modern lines and constructional details. The arrangement is plainly shown by the illustrations herewith. A roomy forecabin for two

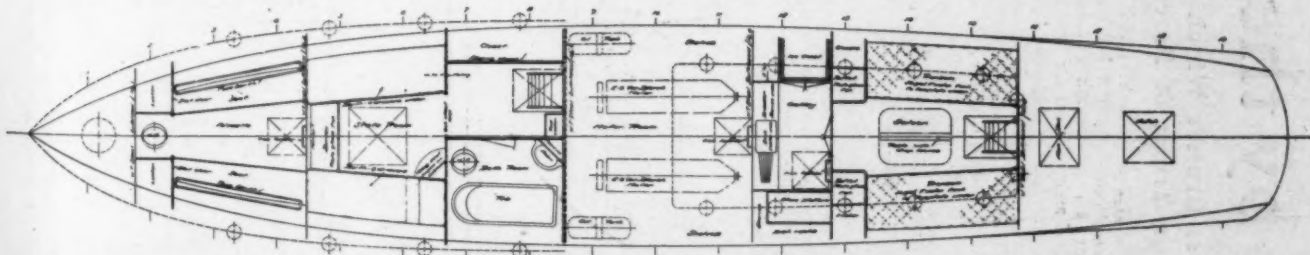
men is provided, and next aft there is a vestibule and bath room. Following is the motor room, which houses two E-6 Van Blerck engines, and aft of this compartment there is a galley extending the full width of the hull. Aft of this there is a saloon with wide transom berths, buffets and other necessities.

A feature of this boat is a built-in fish box aft with scuppers draining directly overboard,

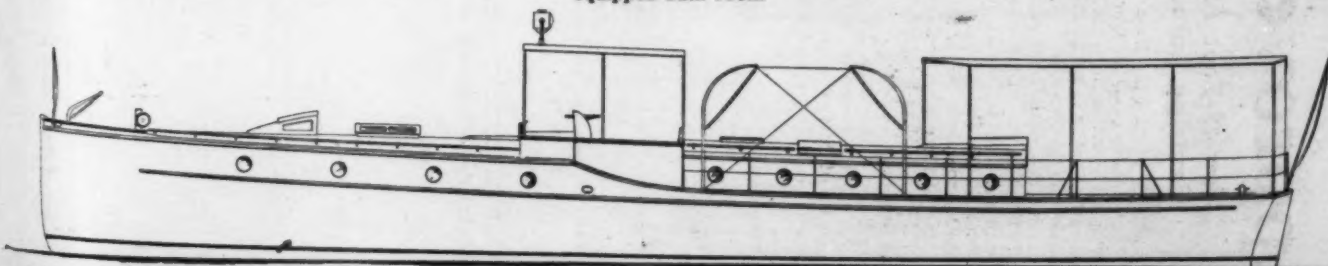
for Kingfisher will be used about Block Island for tuna fishing.

There are five steel water-tight bulkheads built into this boat and every precaution has been taken to make Kingfisher fast and seaworthy, as well as safe and sane.

The dimensions are: Length overall, 60 feet; beam, 10 feet 10½ inches, and draft, 3 feet. The speed will be 21-23 miles.



Although intended largely for fishing and day cruising, Kingfisher is provided with ample living accommodations, including a fully-equipped bath room



Kingfisher is a 60-footer of the well-known Hand V-bottom construction, which with a six-cylinder Van Blerck installed is expected to make 23 miles per hour under normal conditions

Approved by the Navy Department for War Service

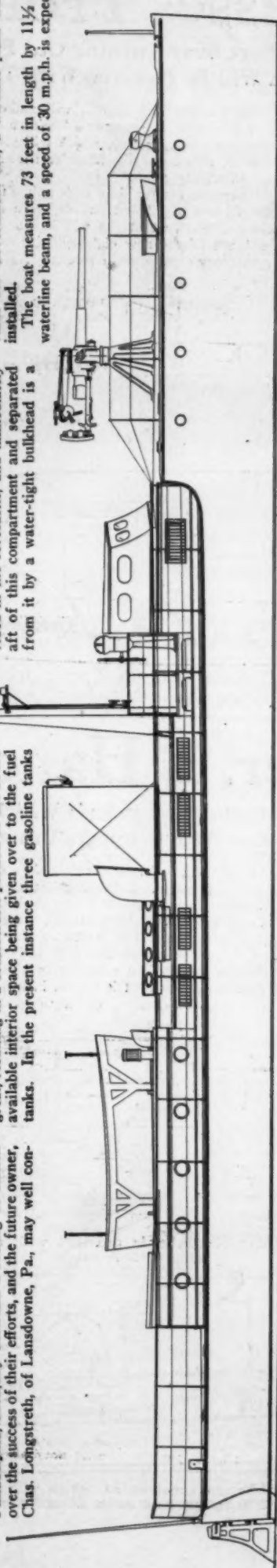
**New 73-Foot Express Cruiser Which Bears the Distinction of Being the First of Its Type to Meet with Official Approval  
Cruising Comfort in Times of Peace Not Sacrificed, Although the Boat Is Designed with Belligerent Purposes in View**

Although designed with naval needs in view, the comforts of a cruiser have not been neglected; the owner is denied the privilege of taking a large party with him, but such accommodations as there are will be found satisfactory in every way. When a boat of this type is desired it is a natural circumstance that a large portion of its length must be given over to the engine-room, not only because a high rate of speed is essential, thereby necessitating large, powerful motors, but because the cruising radius must be great, resulting in a considerable portion of the boat's available interior space being given over to the fuel tanks. In the present instance three gasolene tanks

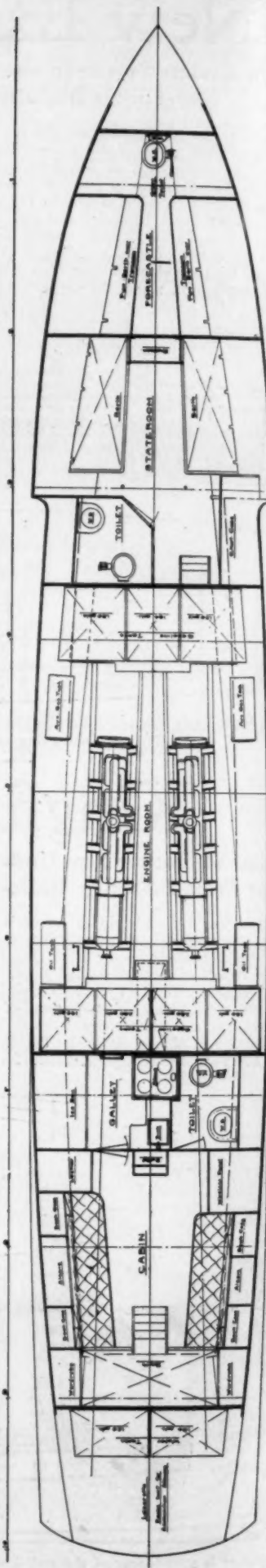
Quarters for a crew of four are provided in the forecabin, and immediately forward of this compartment and separated from it by a water-tight bulkhead is a

The boat will be so constructed that a three-pounder gun may be mounted on the forward deck, and a feature of the design is an ammunition magazine under the after deck. In order to give her greater value for Government use, a wireless plant will be installed.

The boat measures 73 feet in length by 11½ feet waterline beam, and a speed of 30 m.p.h. is expected.



This 73-footer is of a general design which will prove exceptionally valuable in time of need. Wireless equipment will be installed, an arc searchlight will be placed high up on the signal mast, and it will be possible to mount a machine gun on the forward deck.



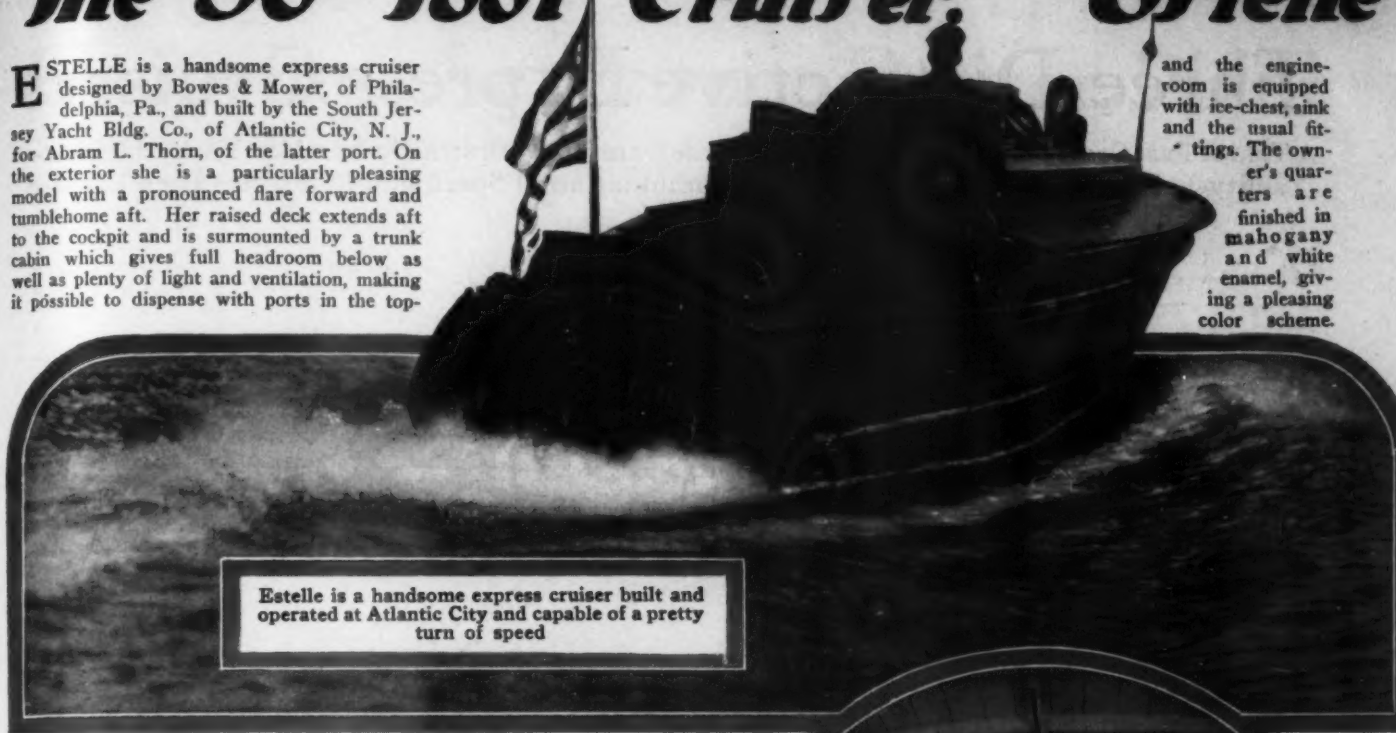
**A feature of this boat is the mounting of the engines. These are placed together with the shafts running aft at a diverging angle, permitting proper clearance of the two propellers and giving effective maneuvering ability**



# The 36-Foot Cruiser. Estelle

**E**STELLE is a handsome express cruiser designed by Bowes & Mower, of Philadelphia, Pa., and built by the South Jersey Yacht Bldg. Co., of Atlantic City, N. J., for Abram L. Thorn, of the latter port. On the exterior she is a particularly pleasing model with a pronounced flare forward and tumblehome aft. Her raised deck extends aft to the cockpit and is surmounted by a trunk cabin which gives full headroom below as well as plenty of light and ventilation, making it possible to dispense with ports in the top-

and the engine-room is equipped with ice-chest, sink and the usual fittings. The owner's quarters are finished in mahogany and white enamel, giving a pleasing color scheme.



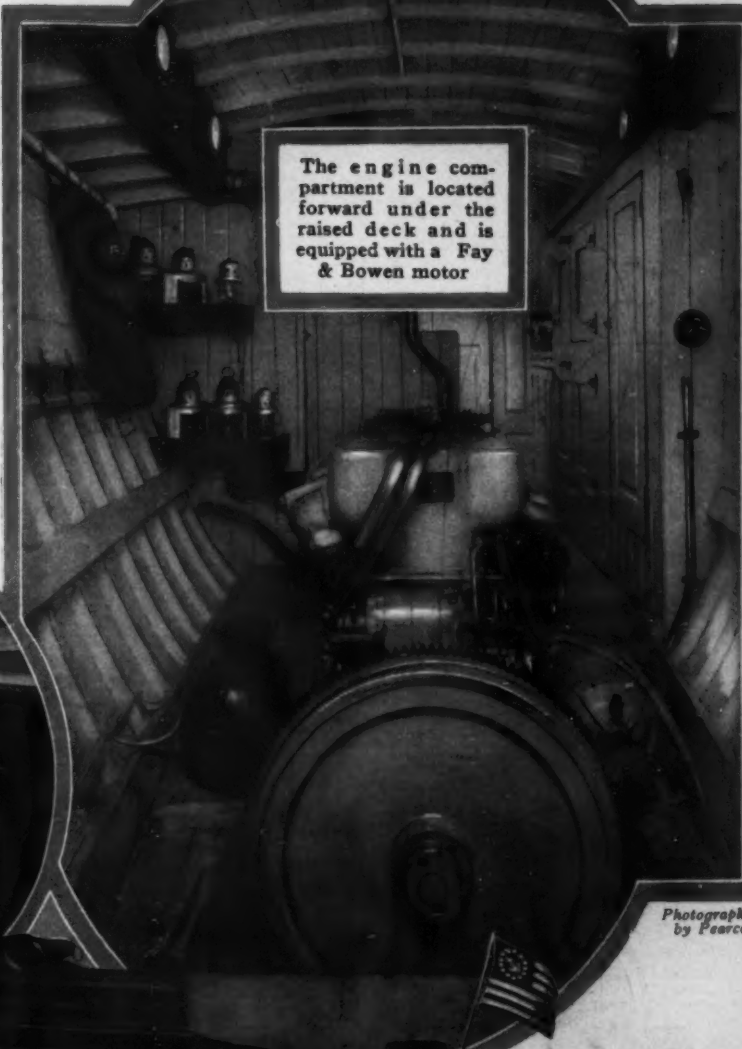
Estelle is a handsome express cruiser built and operated at Atlantic City and capable of a pretty turn of speed

sides. Life raft, horn and wind scoop are mounted on the cabin roof, and the boat flies the distinguishing device of the Chelsea Yacht Club, of Atlantic City. Estelle is controlled from the starboard side of the cockpit, the steering wheel being mounted on the bulkhead, and there is ample room in the cockpit for seating several persons.

Into a length of 36 feet and a beam of 8 feet 1 inch the designers have found it possible to arrange a main cabin amidships, a galley and toilet forward and a roomy engine-room in the bow. The boat's driving force comes from a four-cylinder four-cycle Fay & Bowen motor developing from 30 to 45 h.p. This is a T-head engine having 5 x 6 1/4-inch bore and stroke and developing its maximum rated power at 800 r.p.m. Bosch high-tension ignition is used and the motor is equipped with flywheel starter and a belt-driven dynamo which furnishes current for cranking the motor and for lighting the boat. Motors of this


type have been installed recently in several successful express cruisers hailing from Jersey coast ports.

In addition to its other equipment, the engine-room is provided with a pipe berth for the use of the paid hand. Extension transoms for the owner are furnished in the main saloon, and there is drawer space available under them. The galley, located midway between the



The engine compartment is located forward under the raised deck and is equipped with a Fay & Bowen motor

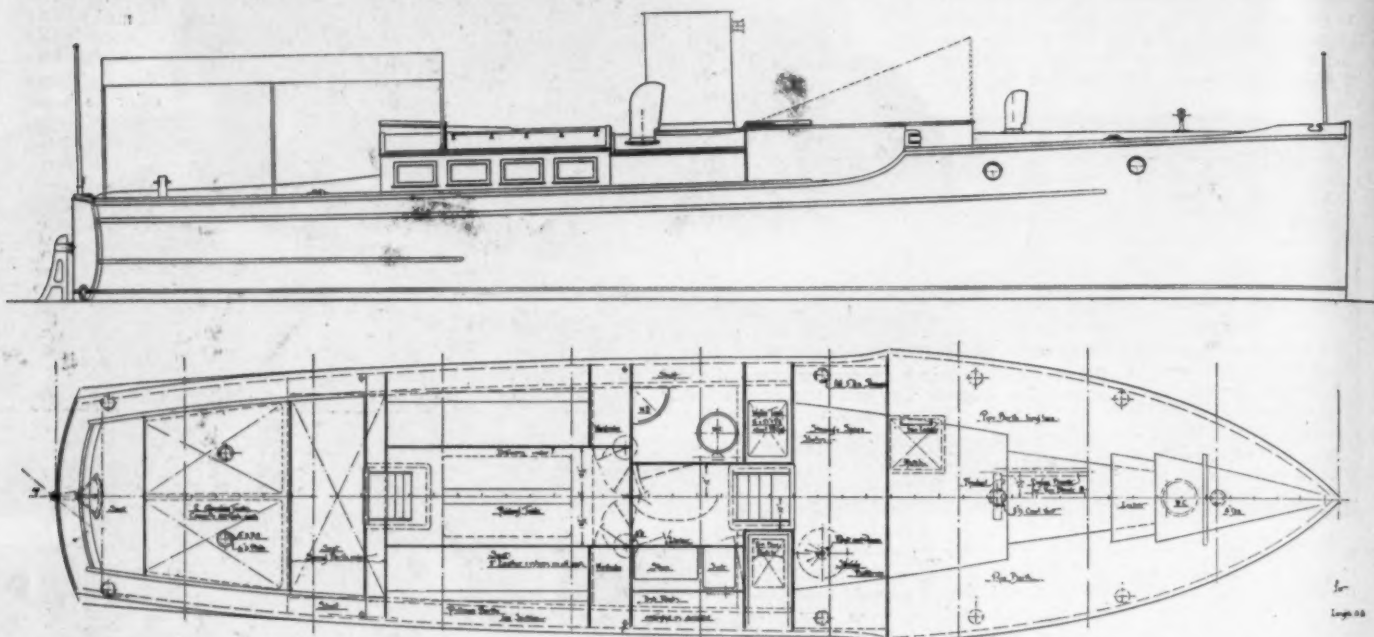
Photographs by Pearce



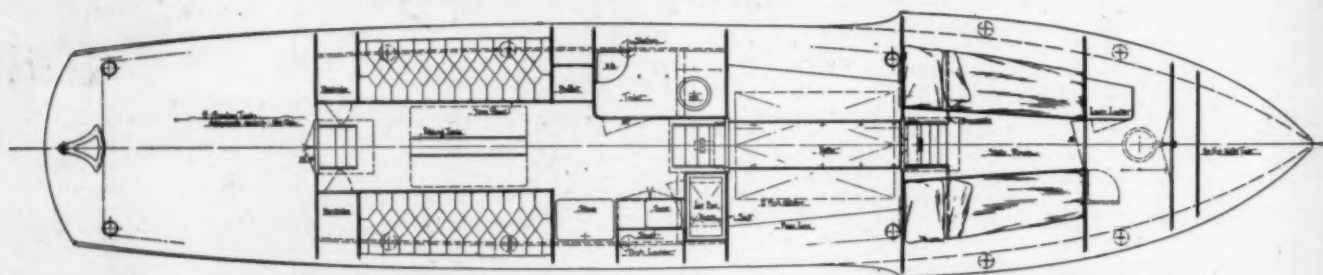
Estelle has a length of 36 feet by a beam of 8 feet 1 inch. She has given good satisfaction in the service for which she was intended

# Three Distinctive Express Cruisers

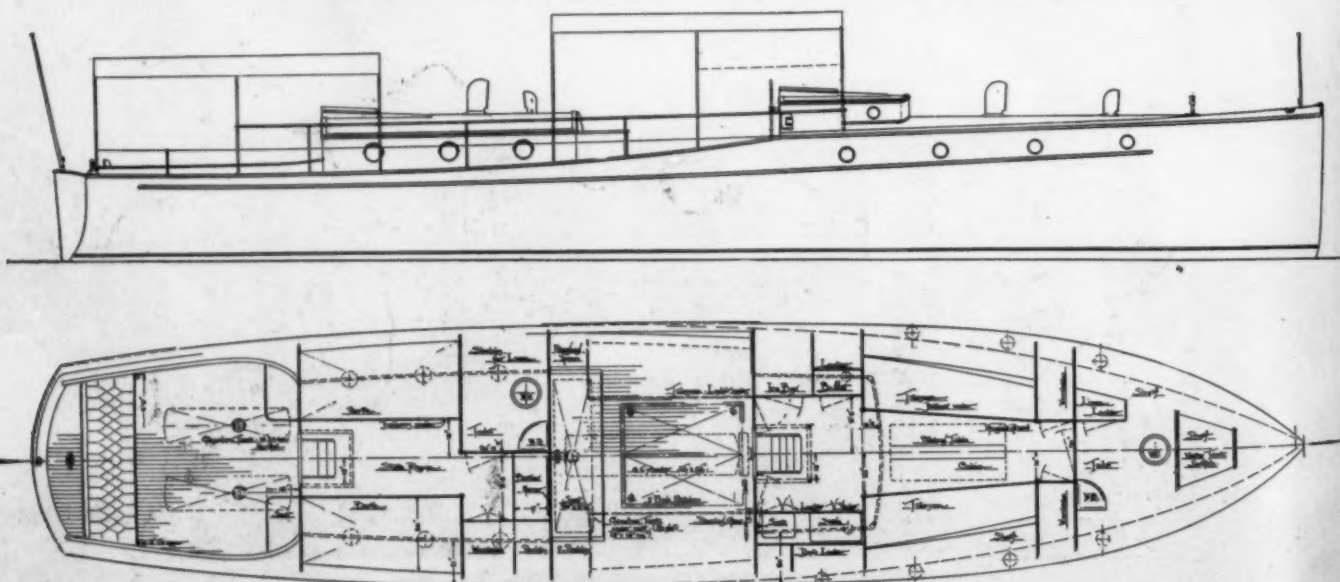
A Trio of Fast Craft Now Building in Local Yards from Plans Drawn Up by a New York Architect—Yachty-Looking Vessels in Which a Good Combination of Speed and Room Has Been Effected



The above arrangement plan and outboard profile are of an attractive 40-footer planned by L. Kromholz of New York City, and now being built for John J. Hanson by Alexander MacDonald at Mariners Harbor, S. I. The Van Blerck engine is placed under the bridge deck forward of amidships and the tanks are installed under the after deck



A 44-footer with a beam of 9 feet 8 inches is now being built after plans by Kromholz at the yards of George J. Stelz, of College Point, N. Y. As may be seen from the above arrangement her owner, Le Roy Moody, has secured a fast cruiser which gives excellent accommodations for himself and his guests. A Sterling motor is included in the specifications



Here is a third Kromholz-designed express cruiser also building by Stelz, which will fly the private signal of William R. Teller of New York. This 50-footer differs from the two smaller boats in interior design, but the lines are kept fine and the 150 h.p. Niagara installed will permit the boat to show a good turn of speed when necessary



# Choosing the Proper Power Plant

The Requirements of Express Cruiser Service Which Influence the Selection of the Motor—  
The Explosion of Old Theory of the Necessity of Using the Heavy-Duty Type

By Thomas D. Bowes, M. E.

IN the past few years there has been a great change in the type of motor boats demanded by the public, a conversion which has been most noticeable in the last two years. The boat in vogue up until lately was the slow, comfortable cruising boat fitted with a heavy-duty motor, turning over not more than 500 r.p.m. The boat now in demand, however, is of very high speed with moderate cruising accommodations, which has become known as an express cruiser. It probably would be safe to say that there are three boats of this type building today for every cruiser of the older design.

With this change in style of boats, it became necessary to develop motors to meet the demand, for when the first boats of the express cruiser type appeared, most of them were fitted with motors entirely unsuited for the work they had to perform. These motors in most cases were those designed and developed for high-speed runabouts and hydroplanes. Of course, there were three or four exceptions to this condition, while a few boats were designed and equipped with eight-cylinder engines of the open crankcase type of large bore and stroke that would give what was then considered large power on medium weight at a moderately high turning speed.

As the demand for larger and faster boats grew, a radical change became necessary. Two years ago it was practically impossible to purchase a stock or semi-stock motor that would be satisfactory for the high-speed express cruiser. My firm tried out several types with more or less success and it was finally decided that the only way to get what was really necessary was to experiment with all the various types that were beginning to appear and then write up specifications covering the good points that we wished retained, eliminating the construction that had given us trouble, as we surely realized that to have successful boats of this type, it was necessary to have successful motors of the right design, horsepower and weight.

After a great deal of investigation and experimenting, we decided that the features we desired were as follows:

1—Reduction of vibration.

2—Lighter moving parts—aluminum alloy pistons in motors of over seven-inch bore had been found satisfactory.

3—Less weight per horsepower.

4—Greater quietness.

5—Enclosure of moving parts.

6—Better auxiliaries, such as circulating, bilge and oil pumps, compressors, filters, coolers.

7—Absolutely clean motors—that is, oil, grease and gas-tight.

8—Greater rigidity of crankcase, doing away entirely with aluminum for this purpose.

9—Better drive for auxiliaries. Vertical shaft at after end with magnetos, pumps, etc., all direct-driven from this shaft where they would be accessible. This

any back-firing would take place near the top of the motor and not near the engine-room floor.

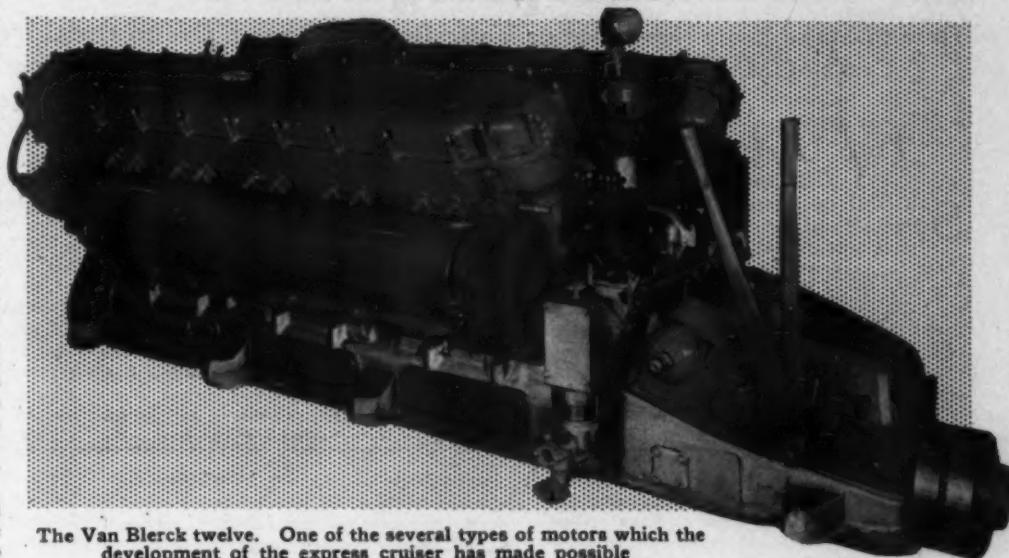
22—Crankcase of such a shape that a proper engine foundation could be installed.

23—Tungsten steel for all exhaust valves.

24—Arrangement of the inlet and exhaust manifolds in such a manner that the athwartship space could be cut down.

25—Larger amount of oil in system located outside of motor.

After three years of experience in running and handling the large motors in the many express cruisers we have designed, and with



The Van Blerck twelve. One of the several types of motors which the development of the express cruiser has made possible

point can be greatly appreciated by anyone who has had to make repairs or adjustments at sea on the average high-speed motors, where pumps have been placed in the bottom of the crankcase or under the engine.

10—Less piping of motors. This has always been a great source of trouble at high speeds.

11—Better clutches with positive lock in the high-speed position.

12—A more efficient shape of cylinder and better location of valves.

13—Better oiling systems—two types needed on all motors, both pressure feed through drilled crankshaft and an adjustable splash feed system.

14—Method of cooling crankcase and oil.

15—Better valve motion with fewer parts.

16—Offset cylinders.

17—Self-starters and generators.

18—Absolute balancing of all reciprocating parts.

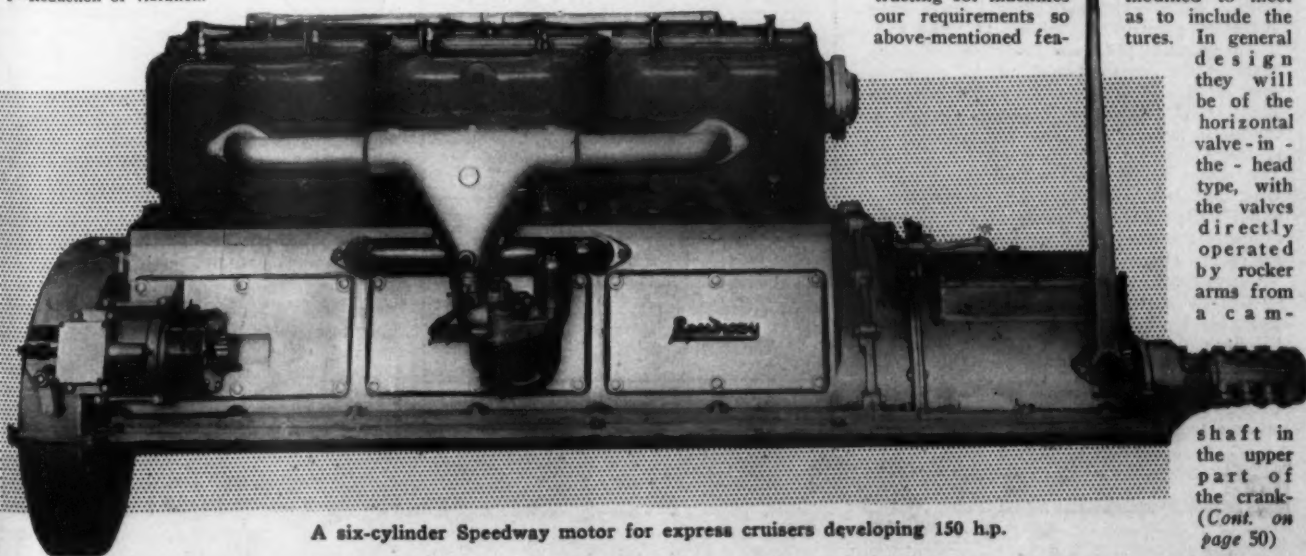
19—Larger bearings.

20—Motors capable of best results from 1,000 r.p.m. to 1,500 r.p.m. with best torque between 1,200 and 1,400 r.p.m.

21—Better carbureters and intake manifolds with carbureter practically enclosed and so arranged that

the above points in view, we started to look the marine and automobile field over thoroughly for a type that could be developed to meet our requirements. At first we were rather inclined towards the valve-in-the-head V-type motor. We then investigated the automobile field and found that several difficulties had been encountered with this type of motor, and the many oiling troubles and great amount of athwartship space required finally made us decide to drop the V-type. After a great deal of further study we came to the conclusion that the motors Mr. Pugh had designed and especially built for his famous Disturber IV came nearest meeting our requirements. With these motors succeeded in con-

modified to meet as to include the tures. In general design they will be of the horizontal valve-in-the-head type, with the valves directly operated by rocker arms from a cam-



A six-cylinder Speedway motor for express cruisers developing 150 h.p.

shaft in the upper part of the crank- (Cont. on page 50)

# PRIZE CONTEST

## In Questions & Answers

### Helping Uncle Sam

How to Make Your New Boat or Your Present One of Use to the Government in Time of Need  
—Craft of Many Types and Sizes Will Be Found Serviceable When It Comes to the Pinch

THE PRIZE CONTEST—Answers to the First Question in the April Issue

#### Two Useful Classes

(The Prize-Winning Answer)

**S**HOULD the United States ever become involved in war the Navy Department would at once take over all suitable motor boats for service as auxiliaries to the Navy. The vast fleet of small craft thus called to the colors would be of immense value to the nation in such a crisis. All the belligerent nations of the present European war are employing great numbers of requisitioned motor craft in their adjacent waters.

These boats, though of widely varying types, may be roughly divided into two classes. First, the smaller and slower boats, which are employed as river and harbor patrols, and Navy Yard tenders for light towing and for relieving the Navy launches from endless routine work, so that the latter may be available for more important duties. Second, a class consisting of speedy, seaworthy boats, which are used on the inner line of the coast patrol and keep vigilant watch by day and by night to prevent surprise by enemy submarines or air and surface craft which may have eluded the watchfulness of the outer patrol squadrons. It is said that about 2,000 Admiralty motor craft are at present operating out of Hull, England, alone. This gives some idea of the very extensive employment of motor craft in the present conflict.

While the Navy Department could probably use motor boats of almost any type provided they were in serviceable condition, there are certain characteristics which would render a boat of exceptionally great value as a Naval auxiliary. The first requirement would doubtless be reliability in both hull and power plant. Then high speed would be a most important requisite, the ability to make from 20 to 40 miles per hour being desirable for boats of the coastal patrol. Next, ability to keep the sea in all weathers would be necessary. High freeboard forward, with flare enough to throw off the seas and a thoroughly protected steering position would be required. The power plant must be entirely protected from the elements, with room enough in the motor compartment to allow of easy inspection and the making of prompt and effective emergency repairs.

Patrol boats should range in size from 40 to 60 feet in length and twin-screw installations would be most desirable, both for added reliability and ease in maneuvering.

An efficient arc searchlight would be needed for night patrol duty, and wireless apparatus would be invaluable for communicating with other patrol units or with shore stations. A

signal mast and yard would be carried for displaying flag signals.

Decks should be locally strengthened to carry one one-pounder rapid fire gun (weighing complete with its mount about 400 pounds), and to withstand successfully the shock of its discharge. Such guns are effective against the light plating of a submarine, and a skillful marksman might perhaps blind the craft by destroying its periscopes, should it be submerged. In boats of the higher class a torpedo tube might be installed, but as these privately owned patrol boats would not be expected to attempt serious offensive work its value on such craft may be considered doubtful.

Patrol boats should not be of extremely light construction, as government service is always strenuous, and the failure of any part of hull, motor or equipment at a critical

moment would be a serious matter. Boats would be expected to ram a hostile submarine if opportunity offered, and while the motor boat herself would doubtless suffer severely from the impact, a strong hull might keep afloat long enough to reach her base or until her crew might be taken off by another unit of the patrol squadron. A fragile craft would doubtless go down with her victim.

The same features which would commend a boat to a Naval officer in war time would also make her a more desirable craft to use for pleasure purposes, and every patriotic owner should keep his boat in a condition of efficiency which would make her of real utility should he ever be called upon to do his bit for his country—whether that might consist of towing coal lighters about a harbor or of hunting enemy undersea craft outside the headlands.

ALLAN O. GOULD, Portland, Me.

#### Questions for the August Issue

1. Discuss the various points which should be taken into consideration when planning for a cruise.

Suggested by A. Y. K., Cleveland, O.

2. Illustrate with sketches design of a satisfactory table for use in the cabin or cockpit of a small cruiser.

Suggested by W. R., Quincy, Mass.

3. Describe and illustrate a small but practical wireless outfit suitable for use on a small cruiser.

Suggested by H. C. H., New York City.

#### RULES FOR THE CONTEST.

Answers to these questions, addressed to the Editor of MoToR Boating, 119 West 40th St., New York, must be (a) in our hands on or before June 20. (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 20th of June.

The prizes are: For each of the best answers to the questions above, any article advertised in the current issue of MoToR Boating, of which the advertised price does not exceed \$25, or a credit of \$25 on any article advertised in the current issue of MoToR Boating which sells for more than that amount. (There are three prizes—one for each question—and a contestant need send in an answer to but one if he does not care to answer all three.)

For each of the questions selected for use in the next contest, any article advertised in this issue of MoToR Boating, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of MoToR Boating which sells for more than that amount.

#### Wireless Equipment a Necessity

**T**HE question of using fast motor boats in modern warfare has been receiving considerable attention of late, and, judging from reports, the foreign powers employing them are doing so to good advantage. It would seem that a fast motor boat should prove extremely useful as a scout, and if sufficiently fast and seaworthy could cover much area and travel well off shore.

Speed, of course, would be one of the prime factors, and to give the most satisfactory service a boat should be capable of making from 25 to 30 miles per hour. This speed would enable her to get away from submarines, and being of comparative shallow draft, she would further prove a very difficult target for a torpedo. A length of 50 feet would be good, as that is sufficient to make a craft seaworthy in nearly all weathers for outside work without sacrificing the very important item of quick handling. Powerful motors, capable of giving the required speed, could readily be installed in a hull of this size without interfering with the necessary crew's quarters or the fuel tanks, which would, of course, have to be of large capacity. The crew would probably consist of seven or eight men, and living quarters for that number could readily be arranged while leaving space enough to carry provisions for a two or three weeks' supply.

The hull should be well made and sufficiently heavy and stiff to withstand the tremendous strains put upon every timber and plank when pounding through heavy seas, but

When you send in your answers you must state what you will take for a prize should you win one



the factor of speed should play an important part in determining the construction. There are a number of craft of a type suitable for service of this sort already in commission that are able to make good speeds, and lines similar to theirs might readily be used for government boats. A boat 50 feet over all would naturally have a shallow draft, comparatively speaking, so that it would be able to navigate many of the inside routes on the Atlantic seaboard, thus being able to pass quickly from one point to another without having to go through the ocean.

Electric equipment is, of course, practically a necessity, as safety from fire should be the first consideration. With a generator and storage batteries, current could be furnished for lights, searchlight, wireless outfit, etc., as in the larger vessels. Self-starters should be part of the motor equipment. There should be water-tight hatches to the cabins and the cockpit should be made self-bailing. Two or three guns would, of course, be needed, and these should be mounted on deck in such positions as to give unobstructed range.

The United States Power Squadrons are producing many able navigators of motor boats who can handle boats of this size and type. ALFRED L. MEGILL, Brooklyn, N. Y.

## Many Boats Readily Available

THE essential features requisite in a motor boat, irrespective of size, for practical use in war time can be covered in three words—staunchness, seaworthiness, speed. With these general specifications in mind, the size and specific use to which the boats are to be put naturally follows. For argument's sake let us arrange them in four classes, as follows: (a) speed or scout boats 35 feet to 50 feet over all; (b) patrol boats; (c) submarine destroyers, from 50 feet over all up; (d) parent ships from 1,000 tons up.

This would seem to cover the field of motor-driven boats at present in existence in the United States and their probable use in war time. The scout boats should have a speed of from 20 to 40 miles an hour and a cruising radius of at least 200 miles; they need not necessarily be equipped with cruising accommodations, but must be capable of mounting a rapid-fire or one-pound gun. Patrol boats should be of sufficient size to have cruising accommodations for six persons, should be

equipped with a wireless outfit, having a cruising radius of at least 500 miles and a speed of not less than 15 miles per hour. They should have a defensive equipment of rapid-fire guns and a six-pounder, the armament being governed by the size of the boat. Submarine destroyers should be not less than 75 feet in length, with all the equipment of the patrol boats, and in addition have a deck torpedo tube and a speed of not less than 25 miles per hour, with a cruising radius of at least 500 miles, so that they could be put, if necessary, to use similar to those of the torpedo boat destroyers.

The parent ship should be built of steel, equipped with the Diesel type of engine, should have a large fuel carrying capacity for her fleet, with space to carry a complete equipment of spare parts, and should have a machine shop and hospital accommodation.

While it is not essential to have all motor-driven boats equipped with a multiple engine and screw outfit, more than one unit is advisable in case of a breakdown. Shallow draft will enable the boats to escape mines, nets and enter our shallow coast harbors, but outside of the parent ship most of our motor-driven boats are so built.

EUGENE LENTILHON, Bay Shore, L. I.

# The Inexpensive Lighting Outfit

Several Contributors Give Advice in the Matter of Installing a Simple But Effective Electric System—Dry Cells Cheaper in Initial Cost; Storage Battery in the Long Run

THE PRIZE CONTEST—Answers to the Second Question in the April Issue

## An Outfit for \$25

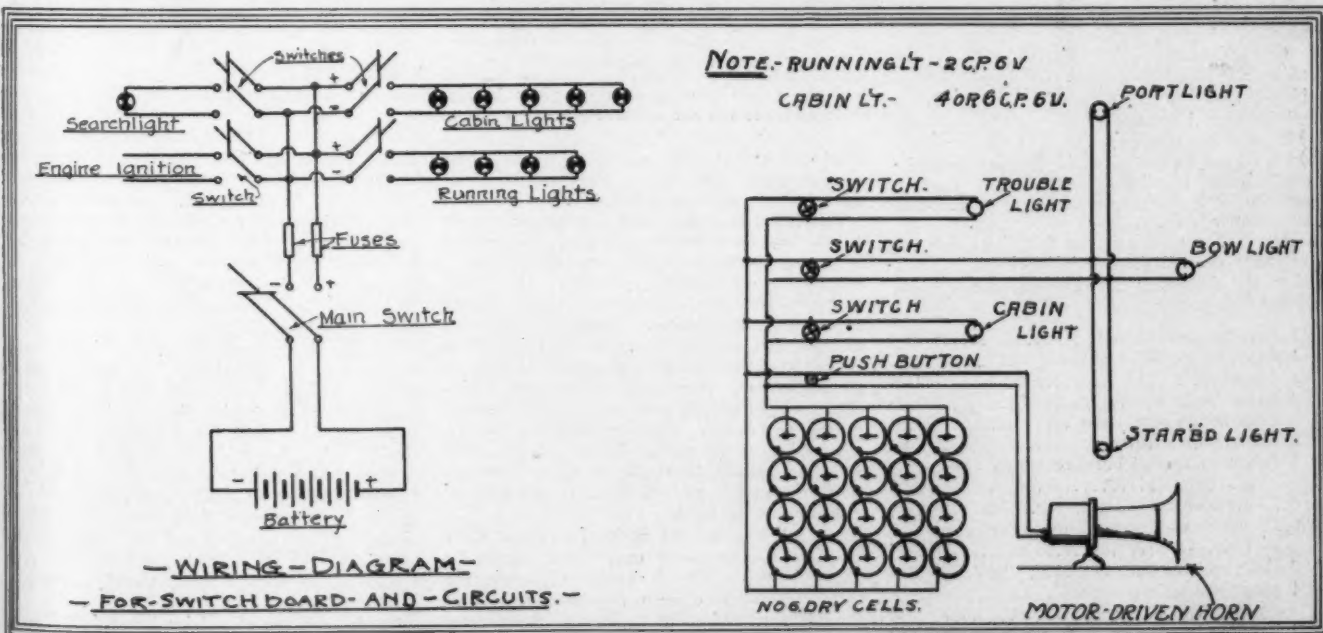
(The Prize-Winning Answer)

ELECTRIC lights on the up-to-date small cruiser are more of a necessity than a luxury, and anyone possessing the ability to run a marine motor may, at small

is nothing at present that will give such satisfactory service and require so little attention as the dry cell battery.

Numerous ways have been devised for connecting the cells of dry batteries, but for lighting purposes there is nothing so good as the series multiple connection shown in Fig. 2.

is recommended in all cases. It is not necessary to limit the capacity of the battery to twelve cells—sixteen may be used, and even more if the number of lights installed requires a larger battery. One dry cell per 2 c.p. installed is a good approximation to follow to obtain the best results. If 6-volt lights are



The diagram at the left shows the switchboard and wiring system recommended by Mr. Dashiell, and that at the right the dry-cell proposition advocated by Mr. McManus

expense, equip his cruiser with a simple but satisfactory and effective lighting equipment.

Storage batteries give excellent results when in the hands of those who are familiar with them, but for one who wants simplicity, there

This connection has many advantages over any other connection for lighting work and

used, four dry cells should be connected in series; this will give, including the drop due to the resistance of the wire and the connections, about 6 volts at the lamp.

An ammeter is shown on the switchboard,

Fig. 1, and in the wiring diagram, Fig. 3. The ammeter is connected in the battery circuit to determine the amount of current flowing in the battery, and by short-circuiting the bus bars shown in Fig. 3 the condition of the battery may readily be determined.

There are no mysteries nor kinks required to be known in order to produce a good substantial lighting outfit, but there are a few essential features which must be kept in mind if effective results are to be expected.

Be sure to install the battery in a place free from moisture and dampness, as either is sure ruination to any dry cell battery. Do not use solid copper wire and use nothing smaller than number 10 Brown & Sharp gauge. Solid wire will break from the constant vibration and will sooner or later be the cause of much trouble and annoyance, as it is extremely difficult to locate a broken wire, due to the insulation of the wire holding the two ends of the wire together. Use only stranded copper wire, be sure that you specify rubber insulation of a good quality, and see that this is protected by a water-proof braid.

All splices and connections should be liberal and all should be properly soldered and taped. Poor connections are the worst offenders toward producing poor voltage. The candlepower of an electric light varies as the square of the voltage, and any drop in voltage due to poor connections is sure to produce a very unsatisfactory light.

One important point to bear in mind is that if you have a set of oil burning lights it will not be necessary to purchase new ones made for electric lights exclusively. Fig. 4 shows the method of adapting the oil burning type of lamp for use with the electric lamp.

For those who are not familiar with the material necessary to make such an installation, the following list of material and costs will be of assistance:

1 Battery, twelve cells.....	\$ 3.00
1 Asbestos or fiber panel.....	.50
1 Ammeter .....	1.75
4 Knife switches .....	1.00
1 Four-inch dome lamp.....	1.50
2 Side lamp fixtures.....	3.00
3 Adapters for oil burning lamps (See A, Fig. 4).....	.75
3 Lamp sockets (See B, Fig. 4).....	1.05
6 Duplicate water-proof connection plugs (Fig. 4-C).....	3.00
3 Deck sockets (See D and E, Fig. 4).....	2.25
1 plug receptacle for trouble lamp (See Fig. 3).....	.50
1 Trouble lamp with 20 feet lamp cord.....	.50
80 Feet No. 10 B & S stranded copper, wire rubber insulated and water-proof braid.....	2.40
8 Six-volt tungsten lights, 4 to 6 c.p....	1.25
Solder, soldering paste, cleats, tape, etc.	2.55

Total .....\$25.00

H. C. HALL, New York City.

## Simplicity the Guiding Thought

A RELIABLE electric lighting system installed on a small motor boat will be found to be most convenient, and the factor of safety derived from use of electricity cannot be overestimated. In equipping a small cruiser with a small electric system simplicity must be the main idea, as boats of this type cannot well take care of a complicated system. Also the fact must be taken into consideration that the owner may know little about keeping such a system in good

The searchlight should be on a single circuit, and the cabin lights on one or two circuits as best decided by the cabin arrangement itself. If the engine ignition is to be taken off this battery then place a switch on the board for it also.

Tungsten lamps are used entirely, as carbon lights draw too much current and give very poor service. The necessary lights and fixtures can be obtained from any electrical supply house. The searchlight will require a light of from 18 to 24 c.p., the running lights from 6 to 8 c.p. and the cabin lights about 8 c.p. It will be found very convenient to have a light encased in a wire cage on the end of a flexible cord to use around the engine, lockers, and other out of the way places.

The battery is connected to the main switch with No. 10 insulated cable; the other circuits may be wired with No. 12 or No. 14 rubber covered copper wire. Do not use wire smaller than No. 16 even on short circuits, as the resistance will be too great. The battery should be protected at the main switch with suitable fuses, with capacities equal to the total amperage of the circuits. These will melt in case of a short circuit anywhere on the boat. Fixtures and wiring should be installed well so as to withstand vibration.

B. F. DASHIELL,  
Baltimore, Md.

## Dry Cell System Favored

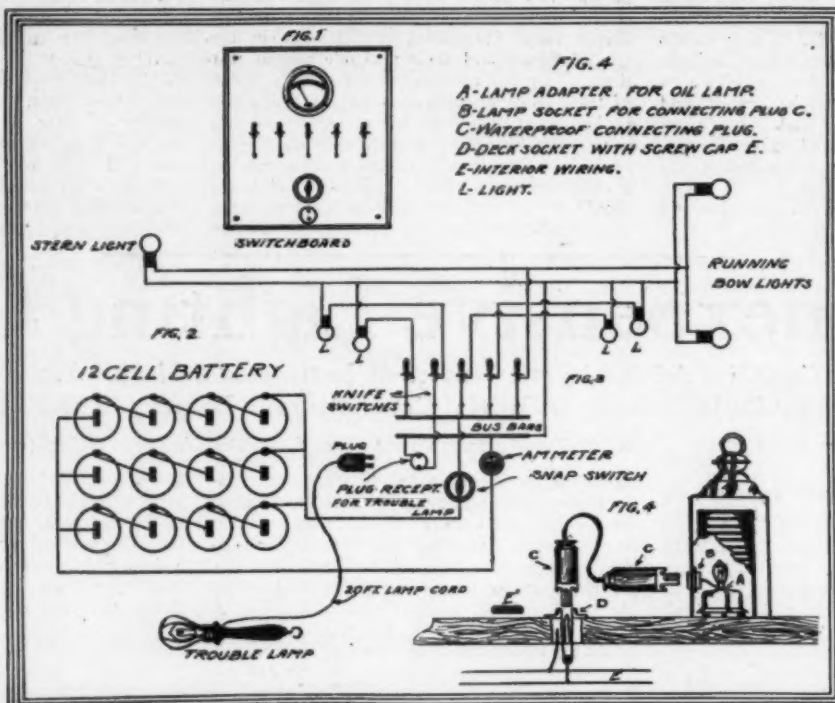
AS there are many owners of small cruisers who do not feel that they can afford to install one of the modern lighting

plants, I shall try to explain how I rigged up a very efficient little lighting system for about \$12 which I have used six seasons at a total cost of about \$5 per season after the first year. Anyone can install this plant by following the directions, and it requires no care after it is installed. I use five lights, but seldom burn more than three or four of them at one time.

For the three forward running lights I use 2 c.p. 6-volt tungsten lamps, and for the cabin light I use one 4 c.p. lamp, and I find 2 c.p. enough for the trouble light which I attach to a long drop cord for working around the engine. As the cabin is finished in white enamel, which reflects a good deal of light, I found that the 4 c.p. bulb gave ample light for reading. In the stern light I burn oil. Thus, when I make a landing and shut off my electric lights, the stern light is left burning and serves as an anchor light, thereby saving a good deal of expense.

To furnish the electricity I use four No. 6 dry cells for each lamp in the system. This gives a voltage of about 5.5 when wired according to the diagram—in multiple series with four cells in each series.

As there have been so many good explanations of this system of wiring given in former issues of MoTOR Boating, I feel that it is unnecessary to deal further with this subject.



Mr. Hall, who submitted the prize-winning answer, gives in his diagram particularly complete instructions for installing a dry-cell system



However, I wish to say that I have found from actual experience that one set of good dry cells wired in this manner will give the average small cruiser or runabout ample light for an entire season, and furnish energy enough to operate a motor-driven horn besides—but maybe I don't toot my horn as much as some people do.

It is not necessary to buy special electric running lights. I fitted my old oil lamps with adapters and short wires leading to a deck plug to which I run the wires from the batteries, under the deck. It is sometimes found that batteries discarded from the ignition system still have enough energy to give a good deal of light. These may be added to the lighting set in series of four, but should first be tested and should show about 8 or 10 amperes each.

I will endeavor to give as nearly as possible with the present fluctuating prices an estimate of the cost of installing this plant:

20 No. 6 dry cells (30c each).....	\$ 6.00
50 Feet double drop cord or 100 feet rubber-covered fixture wire, about	1.50
6 Tungsten lamps, 6-volt, 2 and 4 c.p., about	1.50
4 Porcelain receptacles (10c each)....	.40
1 Brass receptacle for trouble light....	.25
1 Box insulated staples.....	.15
3 Adapters for running lights (25c each) .....	.75
3 Switches or 1 combination switch, about	.75

Total .....\$11.30  
BEN. B. McMANUS, Traverse City, Mich.

### One Dozen Cells Sufficient

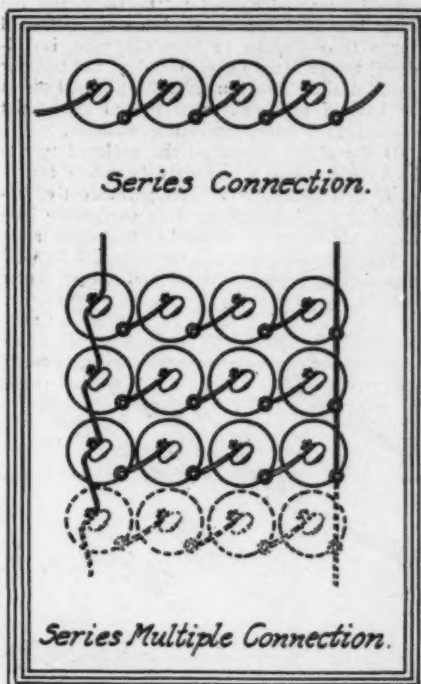
THE dry battery as a source of electric current is by far the simplest and cheapest electric lighting system for occasional use such as is required for the small cruiser or open boat. Where the service is light, that is, the number of hours when illumination is needed are small, nothing can surpass the dry battery for low first cost and freedom from maintenance charges. Where the service is heavy nothing can replace a good storage battery and generator set, but the question with which we are dealing does not contemplate any expensive plant of this kind.

The standard dry cell with which we are all familiar delivers current at 1.5 volts. There are at the present time small lamps on the market which operate at this voltage, but they are not suitable for the service which we are considering—a 6-volt installation is very much better. To obtain 6 volts we

must connect four cells in series, as shown in the diagram. Lamps of this voltage will now operate on a current supplied by the battery.

The efficiency of one set of four cells which is called upon to run four or five lamps is very low. The better way is to provide one set of four cells for each lamp which is burning on the system at one time. As the number of lamps in a small boat is not likely to exceed three or four, a dozen cells will be sufficient.

These should be connected in series multiple, as shown, four cells in series and the three



Mr. Horenburger shows us how to rig up a series multiple connection

sets of four each in multiple. In this way the current drain on each individual cell becomes less, and when three sets are used each cell is doing only one-third as much work as when one set is used. The voltage of the combination will not exceed that of one set, but the service capacity will be increased more than three times as much.

Should more power be desired to operate

the running lights in addition to cabin lights, an additional dozen cells can be connected up in the same way and added to the first set. A battery of one dozen cells connected up as described will operate three or four lamps an entire season for the occasional service required on board a small boat.

A comparison of approximate costs may be of interest: generator, \$25-\$35; storage battery, \$15-\$25; dozen dry cells, \$2.50.

F. M. HORENBURGER, New York City.

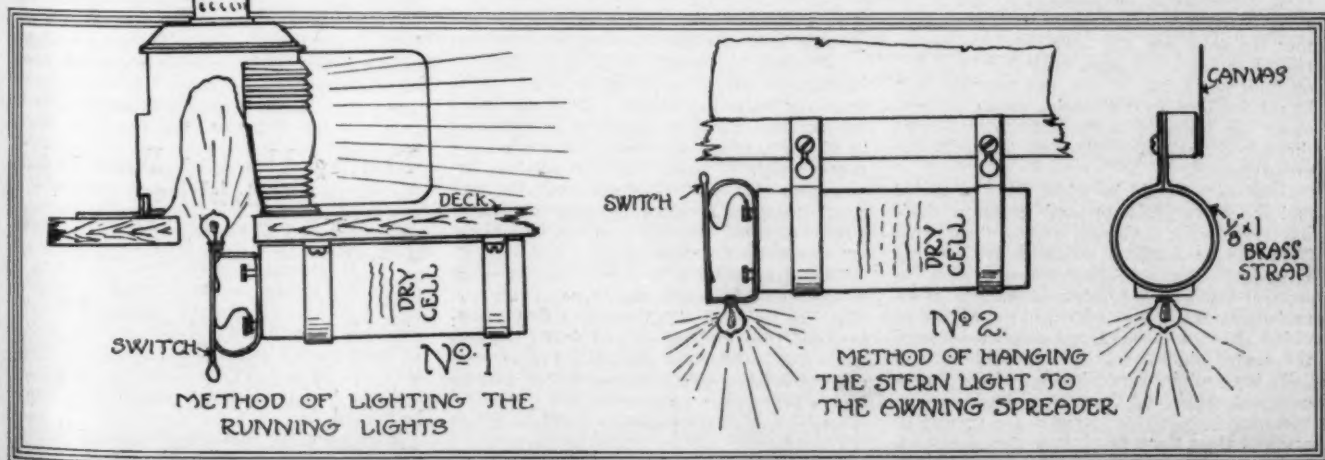
### Uses Flashlight Attachments

THE problem of lighting the boat by electricity usually means that a dynamo with a set of storage batteries will be required. This method, while the best, is also a drain on the main engine, and for a small cruiser that would not require an elaborate lighting outfit it seems that a less expensive system can be used with good results.

It was along these lines that I started to experiment, and I have decided on the following method for this season. On looking over my last season's engine outfit I came to the batteries and resolved to use these if possible; there were twelve in all, so I then purchased from a manufacturer several flashlight attachments that clamp around a two-and-one-half-inch dry cell battery. These were fitted with switch and bulb and sold at retail for twenty-four cents each. I have burned one of these lights for four hours at a time on a last year's battery—in fact, when new they are supposed to burn for a period of forty hours continuously. This figured out that I could burn the twelve batteries intermittently for the season. The running light will be fitted up as shown in Fig. 1, a plug or screw cap being fitted when the running light is removed in the daytime.

The stern or anchor light can be attached to the awning, as shown in Fig. 2, slotted holes being cut in the bracket for the easy removal of the light when so desired. The reflector supplied with the lamp can be easily removed, so as to show a clear light over the horizon, as required by the law. For cabin lighting I would suggest that the lights be hung up at any convenient location so as to give the best light. These will only require one wood screw into the bulkhead or hull. The fitting has a slotted hole that drops on to the screw and permits the easy removal of the light at all times. This method should prove easy to install, inexpensive and satisfactory for a small boat.

WILLIAM RENZ, Quincy, Mass.



Mr. Renz has hit upon the ingenious scheme of running

of using flashlight attachments for all his lights

# Making a Unit Power Plant

For Greater Rigidity and More Accurate Alignment the Engine and Reverse Gear Should Be Installed Inseparably—How to Accomplish This With Your Own Outfit

THE PRIZE CONTEST—Answers to the Third Question in the April Issue

## A Home-Made Enclosed Unit

(The Prize Winning Answer)

TO obtain the advantages of a unit power plant it is not sufficient merely to have the motor and clutch fastened to a rigid base, but provision must also be made to close in the machinery as much as possible so that oil and grease will not be continually running into the bilge and flying over the boat and its occupants.

The outfit described below will have practically all the advantages of the regular unit power plant, except that it may not be quite as compact. There is not much machine work, and the boat owner can make it himself if he has access to a post drill press and a few drills and taps.

The foundation consists of a pair of angle irons; these should be as heavy as possible, and if the webbs are of unequal widths the deepest webbs should be set vertical to allow for the greater stiffness. The engine base should be bolted to one end of the pair of angles and the clutch to the other. If the motor and clutch bases are of equal width and of equal height from the center line of the shaft they can be both fastened directly to the angles. But if the clutch base is narrower, as would likely be the case, then an auxiliary pair of angle irons must be bolted or riveted to the inner faces of the main angles, as shown in the drawings, the motor in all cases to be bolted directly to the main pair of angles. If the irons are heavy enough they should be drilled and tapped for holding-down bolts; these bolts are much stronger if the S. A. E. standard threads are used. If it is thought that the bolts will not hold they can be extended through the irons with lock nuts put on underneath, but in this case recesses must be cut for them in the wooden engine timbers. Holes for fastening to the timbers are drilled through the angles outside the holes for the motor base.

Great care should be taken that the engine and clutch are perfectly lined up before drilling the holes for the clutch holding-down bolts. They can be lined up vertically by inserting thin metal shims. It is not necessary that the tops of the angles be planed off, and in all probability the bottom of either the engine or clutch base will be found unplaned—hence the use of shims.

To keep oil from running out of the crankcase and clutch and down over the base, iron bars, say  $\frac{1}{4}$  x  $\frac{1}{4}$ -inch square, are riveted or screwed along the tops of the angles, as shown, and the ends bent around so that the oil will be carried into the drip pan.

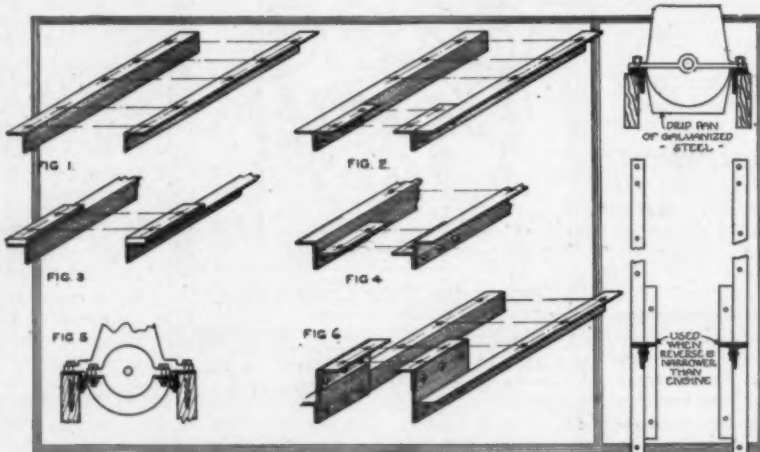
This drip pan is made of heavy galvanized

iron, at least No. 20, bent to shape and riveted to the outside vertical faces of the angle irons. Two ends are made as shown, the edges turned over and riveted to the body, and the seam heavily soldered. A brass spud, tapped for a three-eighths or half-inch pipe, is soldered to the after (lower) end of the pan for an oil drain. This can either be plugged direct or have a pipe run from it and the outlet carried to a more accessible position.

If the clutch is not of the enclosed type a heavy sheet iron cover may be made for it. It is best not to have this permanently fastened down, but to have it fit over some iron cleats which can be screwed to the angle irons.

This arrangement makes a very stiff foundation and also keeps the oil and grease under control.

H. H. PARKER,  
Oakland, Cal.



Diagrammatic illustrations of the various uses of angle iron as proposed by Mr. Kelley; and, at the right, the method suggested by Mr. Christie when a drip pan is desired

## Accurate Alignment Essential

IN the unit power plant the engine and gear bases are cast in one piece, obtaining accurate alignment, with practically no increase in weight over the separate engine and gear units themselves. By means of a sub-base, the engine and gear can be connected to obtain accurate alignment, although some excess weight is added; but this sub-base arrangement has the advantage over the unit power plant that either the gear or engine can be removed separately and entirely without disturbing the other.

The excess weight in some boats may not be objectionable, and in these cases a cast iron base can be used. This requires first a pattern and then the casting, and finally the surfaces upon which the engine and gear rests must be finished accurately and drilled, making such a base rather expensive.

Where weight is of some importance a sub-

base made from steel angles will be lighter and the expense will be not nearly as great as for a casting. This is the style I have illustrated. An 8 h.p. two-cylinder engine and the reverse gear in my boat are mounted on a sub-base like Fig. 2. The angles are 2 x 2 x  $\frac{1}{4}$  inch, and they can be secured in almost any size quite cheaply. Fig. 1 shows two angles used where the engine and gear base have the same spread and are on the same level. Fig. 2 shows four angles—two short and two long, the short pieces being riveted to the larger pieces with the top surfaces flush, where the gear is narrower than the engine. Fig. 3 uses flat strips to bring the gear base to the correct height, or these strips could be used under the engine base if necessary. Figs. 4 and 6 show other forms. In Fig. 5 an end view is shown, with the lag bolts through the engine base, sub-base and engine bed. Here the reverse gear is bolted to the sub-base. In some cases the engine can be bolted to the sub-base, the bed being cut out to let the nut in and the sub-base lag-bolted at other points to the engine bed.

Altogether, the angle form of sub-base, being easily made and cheap, appeals more to me than a heavy cast-iron one with its expensive machine work. The main point is to get the holes in the sub-base exactly right, and of the same size as those in the engine and the gear, so that fitted bolts can be used, allowing no looseness or side motion. This is accomplished by setting up the engine and gear exactly

right on the sub-base, clamping them in place, and with a drill of the same size as the engine and gear holes boring into the angles. Where two angles are joined together use three rivets at least, riveted while hot to make a tight job. The difference in height of the bases can be readily measured from the shaft centers.

L. R. KELLEY, Philadelphia, Pa.

## Truing Up the Base with Babbitt

A GOOD way to install a separate motor and reverse gear is to mount them on two pieces of angle iron. This may be obtained in a great variety of sizes and weights, and of course the size and weight of the engine will govern one's choice in the matter. In most cases a rather heavy section of angle iron will be best, as it will prove more rigid and the slight additional weight can hardly be noticed.

Where the facilities are at hand or the expense is not an objection the top edges may be planed straight. If the lower side of the foundation lugs or flange has been planed the



engine may then be bolted directly to the angle irons.

The regular stock reverse gears often require a foundation somewhat narrower than that for the engine. In a case of this kind two short pieces of light angle iron may be bolted or riveted inside the long pieces to carry the reverse gear.

After the engine has been bolted down, couple the reverse gear to the engine and block it up until perfectly in line, then place the short pieces of angle iron in position up under the foundation lugs of the reverse gear and clamp them in place. They can now be drilled and riveted or bolted; if bolts are used there should be a couple of dowels to prevent any movement. The holes for holding down the reverse should be marked at the same time so that they can be drilled and tapped for cap screws.

Another plan which will give exactly as good results, but will prove less expensive where the work is done outside of a regular shop, is to use the angle iron in its rough state, running babbitt metal under the bearing spots or lugs of the engine and the reverse gear. With this method drill and tap all holes in the angle irons for holding down the engine and the reverse, as well as holes for bolting to the engine bed. Then bolt the engine and the reverse to angle irons, leaving a space of about a quarter of an inch in which to run the babbitt. This can be done by inserting small iron wedges between the engine lugs and angle irons. Adjust these until the engine and the reverse are perfectly in line and then run in the melted babbitt metal directly below each holding-down bolt. To prevent the metal from running out use small pieces of wood and clay or putty to close up small openings. This would be the best plan to follow in any case where the foundation lugs have been left rough.

When the flange coupling between the engine and the reverse is bolted up tight it is supposed to bring the two shafts perfectly in line, but this is not always to be depended upon, as there is a possibility of slight inaccuracies in the coupling; also if the crankcase and gear case are not carefully supported the shafts may be easily sprung. If a part of the engine and gear shafts can be exposed so that a short level can be used on them it will be a simple matter to bring them perfectly in line. One objection to a separate engine and gear is that oil sometimes works out around the after bearing of the engine and even so-called oil-tight gear cases some-

times leak oil into the bilge. After an experience of this kind for one season I made a pan or sub-base of light galvanized steel, long enough to take in both engine and reverse. The edges were flanged out and went in between the engine lugs and the angle iron bearers. This collected and retained any oil that leaked out as

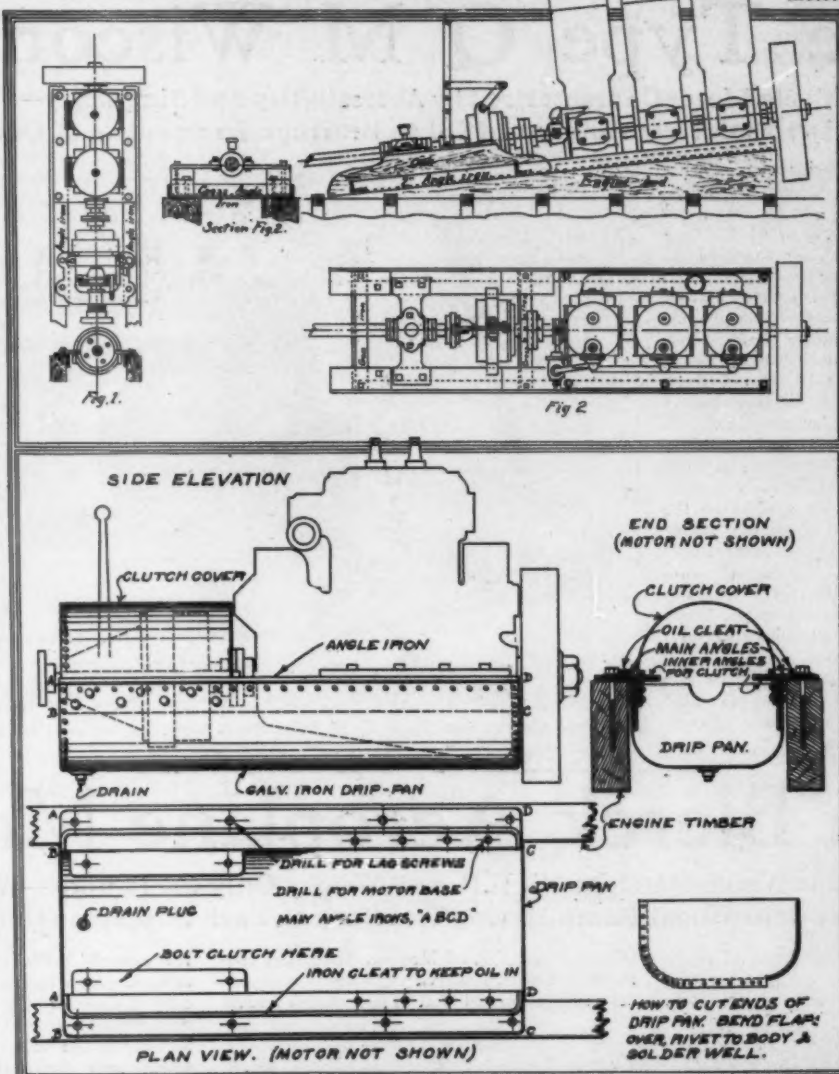
gear, being very rigid, will be found most satisfactory. In some cases the iron may have to be bent, as not all gear frames are as wide as the motor base, but generally the gear used with a motor is so nearly of the same width that one gets a good job. Fig. 1 illustrates an installation in which the engine base was thirteen inches wide, while the gear was only eleven inches; here by using two-inch angle iron set under the motor so that the flange formed

by the iron came inside of the engine bed it was possible to bolt the gear and engine on the straight iron. However, the installation in my own launch is a very different proposition. I have a 14 h.p. three-cylinder motor on which the base is five and three-quarters inches below the center line of the shaft and is twenty inches wide, while the gear is fifteen inches between fastenings with the lug three-quarters of an inch below the center line of the shaft. In this case I used 2x2-inch angle iron put on the under side of the engine base, with one edge up outside it, riveted solid.

Then, carefully measuring the gear so not to interfere with any working parts, I put in two cross angles under the gear on the inside of the long angles. This left the bottom smooth and no cutting of engine bed timbers was necessary. Next, taking two pieces of 3/4 x 5-inch hard oak, long enough to accommodate the gear, with allowance for cutting the fore and aft ends to give ease of fastening, I fitted them down over the cross angles and up against the side angles (the drawing in Fig. 2 shows this plainly) and bolted all together. In this I put my gear, which, with a little care, lined up perfectly,

and the engine and gear unit was then put into the boat and on the bed already prepared for it, and lined up with the tail shaft; controls were run to the bulkhead on deck. This part of the installation has never given any trouble whatever, and it has had the hardest kind of usage, being used in ferry service day and night, seven days a week, and making landings at both ends of a five-minute run. By referring to the drawings any one can work out an installation of this kind to suit almost any case that would present itself. I put this outfit into my own boat over two years ago and have had no occasion to change it since, as it has worked out satisfactorily.

W. L. G., San Diego, Cal.



The upper drawings illustrate the unit installation arranged by W. L. G., which has given the utmost satisfaction in ferry service. In the lower plans we are shown the home-made enclosed unit suggested by Mr. Parker, the prize-winner

effectually as the continuous bed plate used when the reverse is built in.

C. H. CHRISTIE, Saginaw, Mich.

### Hard Oak with Angle Iron

**M**OUNTING an engine and separate reverse gear so as to obtain the advantages of a unit power plant is comparatively easy on motors that have the lugs or foundation on the shaft line. On most motors the top of the engine bed comes about three-quarters of an inch below the center of the shaft, and with these motors angle iron bolted to the base and extended to take the



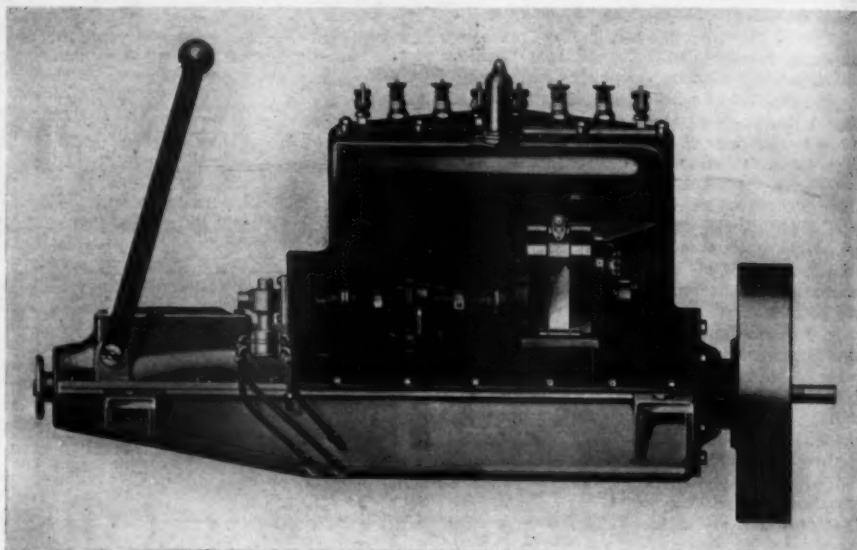
## The Type Q M Wisconsin

**High-Speed Four-Cycle Motor Characterized by Accessibility and Simplicity—Force Feed Oiling System Which Drives Correct Amount of Oil to Bearings Irrespective of Operating Angle**

**L**IGHTNESS and superior strength are two factors which commend themselves to any user of a high-speed engine, and the Wisconsin Motor Mfg. Co., of Milwaukee, Wis., has centered a large share of its attention on obtaining these essentials in its line of Wisconsin Consistent four-cycle motors. Simplicity and accessibility are also important features of a marine power plant, and that they have been incorporated in the Wisconsin models may be seen from a glance at the accompanying illustration of the Type Q M four-cylinder machine.

This motor is a block model having  $3\frac{1}{4} \times 5$ -inch cylinders and developing 18 h.p. at 1,000 r.p.m. Access may be had to the valve-actuating mechanism by removing a plate on the starboard side, while the crankcase is instantly opened to view through large hand-holes on the opposite side. Neither the carbureter nor the magneto interferes with the easy adjustment of the moving parts, while these instruments themselves are instantly gettable for necessary regulation.

Wisconsin motors are characterized by the use of high-grade materials and they are kept in good condition by an extremely efficient force-feed method of lubrication.



Starboard side of the Type Q M Wisconsin, showing installation of magneto and oil and water pumps

## Van Blerck Aeroplane Model

**New Twin-Six Engine Which Develops 185 H.P. and Weighs Only 600 Pounds—Water Circulation Provided by Duplex Centrifugal Pump Having Two Outlets, Each Supplying One Set of Cylinders**

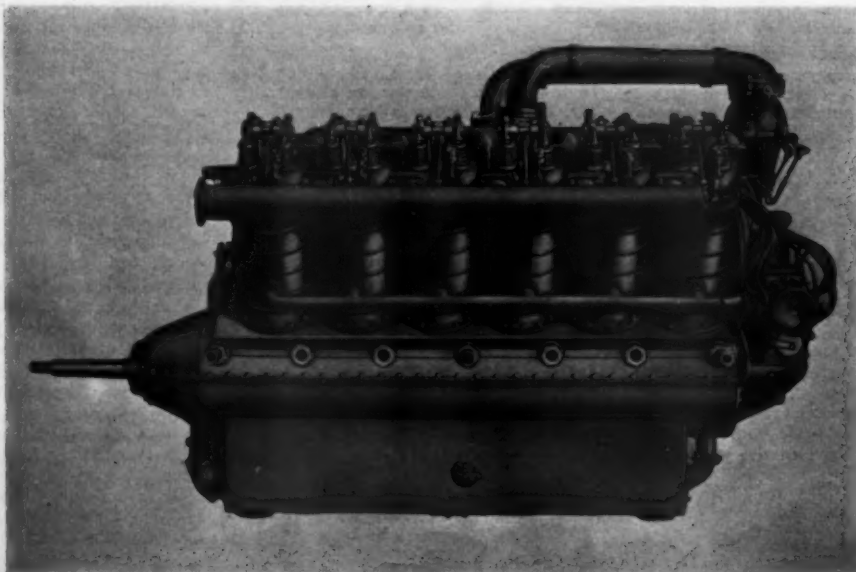
**A**N innovation in the aeronautical realm is the new twin-six aeroplane motor now being turned out by the Van

Blerck Motor Co., of Monroe, Mich. So confident is the Van Blerck company of the success of this model that it has placed orders

for material sufficient to build 500 complete motors. If a hydroaeroplane were built for each of these motors and put in service by the government for defense work along the coast in conjunction with motor patrol vessels we would have the nucleus of an adequate air fleet—but that is only a vague dream of the future.

The motor has twelve cylinders arranged at the usual sixty-degree angle, and staggered to provide for independent connecting rod bearings on the crankpins. The bore of the cylinders is  $4\frac{1}{4}$  inches and the stroke  $5\frac{1}{2}$  inches, giving a piston displacement of 1049.7 cubic inches, and 185 h.p. at a speed of 1,400 r.p.m. The weight is 600 pounds when the motor is stripped of propeller, radiator and self-starter.

The crankcase is made of high-grade steel stampings and the motor supporting arms are steel tubes passing through a tubular section of the drop-forged web and nut-locked in place. These tubes, three in number, extend a sufficient distance outside of the crankcase to provide adequate means for firmly mounting the motor on the supporting members of the fuselage. Materials of the best grade enter into the construction of the engine, drop-forged chrome nickel steel being used for the crankshaft, machine steel for the camshaft, nickel steel for the gears, tungsten alloy for the valves, and spun copper for the water jackets.



The Van Blerck aeroplane motor which is equipped with two magnetos, duplex carbureter and two duplex oil pumps



# Enter the Counterbalanced Shaft

The Model F Six-Cylinder Sterling Engine Fitted with Crankshaft of This Type in Order to Eliminate Vibration and Increase Life of Bearings—Other Important Features Noted

**M**ORE than ordinary interest should attach to the adoption of a special six-throw counterbalanced crankshaft by the Sterling Engine Co., of Buffalo, N. Y., in its new Model F six-cylinder machine.

The centrifugal forces present in all rotating bodies are very evident at high speeds in large cranks such as are used in the Model F Sterlings, but the scientific counterbalancing of the shaft to overcome these forces is asserted to have practically ended vibration, affording a wonderful smoothness of acceleration as the motor speeds up, and by preventing deflection of the crankshaft reducing bearing friction to a minimum.

The forces set up by the crank arm, crankpin and the lower portion of the connecting rod when revolving the crank at high speed tend to create a certain amount of deflection in the shaft at the bearings. This deflection prevents the crank and bearings from remaining parallel, and when the motor is operated under this condition for any considerable time unequal wear in the bearings and additional friction will result.

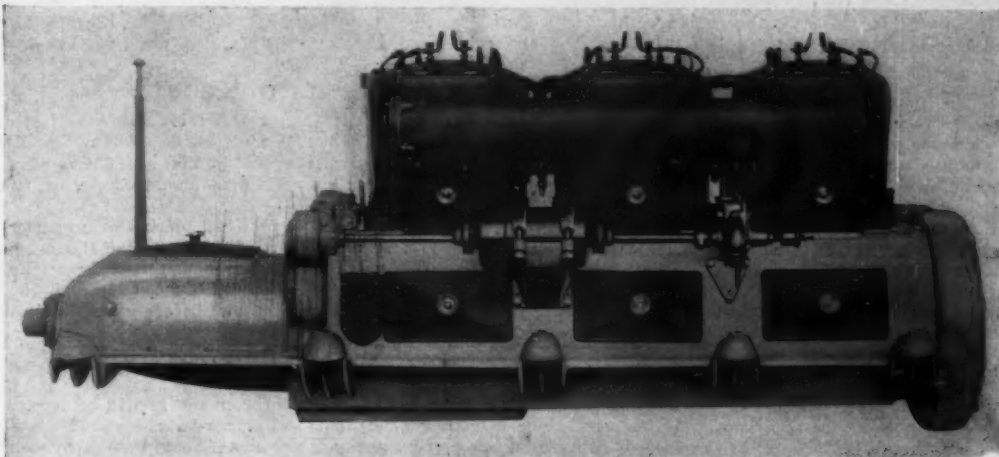
To overcome this trouble counterbalanced weights are electrically welded to the crank arms, setting up a force opposing that of the crank arm and crankpin. As the counter-

weights are located at the bearings the counteracting forces prevent deflection of the crank and by keeping it true and straight in the bearings overcome friction.

The company states that the benefits accruing from this feature of scientific counterbalancing can hardly be overestimated, as no department of high-speed motors has given so much trouble as the bearings. By reducing bearing friction to a minimum, the life of the bearing is greatly lengthened, so that this

feature combined with the hollow crankshaft force feed lubricating system and the large bearing surface used on the Sterling Model F has ended this bugbear and has increased both the power and the efficiency of the high-speed motor.

The cylinders are cast in pairs with a bore and stroke of  $5\frac{1}{2} \times 6\frac{3}{4}$  inches, developing 65 h.p. at 600 r.p.m. and 145 h.p. at 1,500 r.p.m. The Stewart carbureter is used, while ignition is by Berling two-point dual magneto.



Counterweights are electrically welded to the crankshaft of the new six-cylinder Sterling to reduce friction on the bearings

## Kerosene Motor Has Try-Out

New Twentieth Century Four-Cylinder Engine Fitted with Vaporizing Contrivance Given Successful Test in New York Harbor—Device Simple in Design but Effective in Operation

**I**N an effort to make the fuel situation of less ominous import to the marine engine owner, the New York Yacht, Launch & Engine Co., of Morris Heights, N. Y., has been experimenting for some time with a kerosene model of its Twentieth Century motors. This model has been tried out successfully both in the shop and in actual service on the water and has given the greatest satisfaction. During recent tests the kerosene showed no noticeable carboniza-

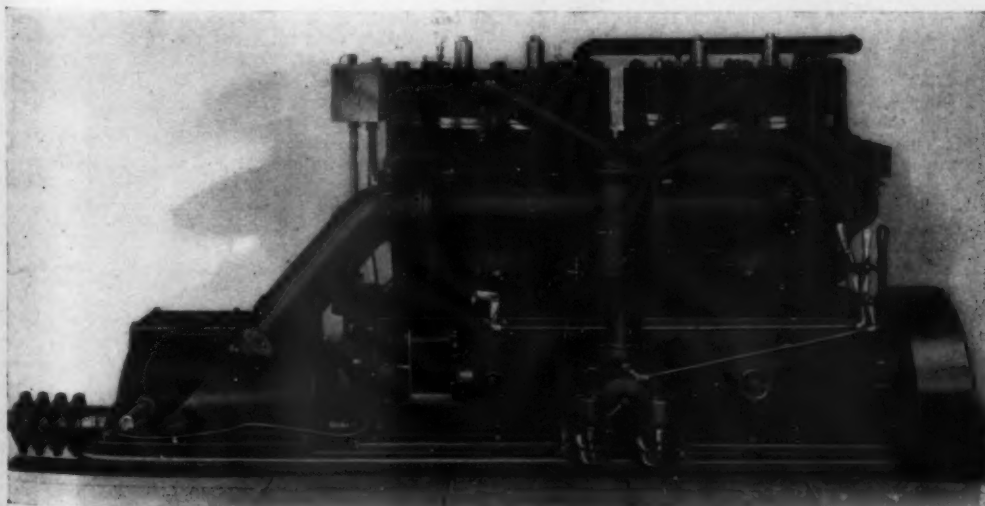
tion of the spark plugs, while throttling under load was effected as easily as may be done when gasoline is the fuel used.

As shown in the accompanying illustration the vaporizing contrivance consists of a vertical chamber set into the exhaust manifold midway between the two blocks of cylinders. Within this upright cylinder are sixteen tubes of a heat-conductive metal through which the kerosene passes from the carbureter on its way to

the forked intake manifold. The hot exhaust gases from the first two cylinders pass around the tubes, heating them thoroughly and vaporizing the kerosene. As the vaporizing chamber and the exhaust manifold are efficiently water-jacketed, no tendency toward excess heating is observed, even in long runs. No water is introduced into the cylinders, and the carbureter used is a regular double-bowl Kingston, by which the motor may be started and warmed

up on gasoline. Twentieth Century heavy-duty kerosene engines are now being put out in two, four and six cylinders, with a bore and stroke of  $6\frac{1}{2} \times 8\frac{3}{4}$  inches, developing respectively 15-20, 40-50 and 65-75 h.p.

One of the four-cylinder motors was recently installed, replacing a gasoline power plant, in a large fishing vessel used almost daily throughout the year for taking out parties from New York City, and the results of the first month's test indicate that the outfit is an entire success. Although the operator is not a skilled hand, absolutely no trouble has resulted, and the saving in fuel charges has amounted to over \$5 per day. The motor runs under full load and full throttle at 425 revolutions per minute, but can be throttled down to 350 r.p.m. without difficulty picking up again without a sign of smoke in the exhaust.



Starboard side of the new Twentieth Century kerosene engine, showing the arrangement of the two-bowl carbureter and the vaporizing device



# Racing Stunts



At this time of the year, when club regatta committees are putting on their thinking caps to help them make the summer's events interesting and successful, we take pleasure in offering five suggestions for novelty races. Speed is not a requisite in any of these events, but neither is the possession of it a deterrent, so there is no reason why all contenders should not be pleased.

In past issues—October, November and December, 1915, and January 1916—we



have published other suggestions to the number of fifteen, and from a study of these it should be possible to obtain just the right material to make Club Day a joyful occasion.

We invite the readers of MoToR Boating to submit any stunt races which seem good to them, and also any ideas for novel handicaps which are new as well as practicable. For each contribution of this nature that we are able to use we shall pay at least \$5.

—The Editor.

## A Nautical Potato Race

**I**N this race four mark-boats are required, the one farthest from the start (which preferably should be just off the club float) being stationed one mile out, the other three to be anchored in line and each a quarter mile from its neighbors. An official should be on duty on each mark-boat to watch for fouls, etc. Each contestant receives a number to be displayed on his boat as usual, and a bucket, numbered to correspond, is placed for him on the club float. Into these buckets the contestants will drop numbered wooden tags or "potatoes" of which one for each entrant is to be found on each of the four mark-boats.

At the starting gun the boats will cross the line on even terms and proceed to No. 1 mark-boat a quarter of a mile distant, each stopping there to secure its numbered potato, and, leaving the mark-boat to port, rounding it to return to the starting point where the potato is dropped into its proper bucket. The No. 2 mark-boat comes next, the boats stopping for their tags as before and straightway returning with them to their buckets on the float. Mark-boats 3 and 4 follow in order and the first contestant to place all four potatoes in his bucket is the winner, each mark-boat having been visited in turn and the potato immediately rushed back to the starting point before proceeding to the next mark-boat.

A. O. G., Portland, Me.

## For July 4

**T**HE following contest is especially appropriate to wind up motor boat races held on the Fourth of July.

First prepare a number of bundles, one bundle to each boat entered, and each containing a duplicate set of flags, bunting, etc. Each boat is given one bundle and at a signal all start out in a given direction. The boats should keep fairly well bunched as speed is not required. At a second signal all boats stop at once and anchor. The bundles are opened and the boat crew begins to decorate the boat with the contents of the bundle. At the expiration of a given interval of time a third signal is given. Work must be stopped at once and the boats got under way, heading back for the starting point, forming a single line and in this formation passing in review.

A committee of disinterested persons should judge which of the boats is the best decorated, and the boat so chosen is awarded first prize. To remove any chance of possible confusion, it is well to place consecutive numbers, starting with 1, on the outside of the bundles. Then No. 1 will come first in line, No. 2 second, etc. If the boats entered vary in size to a great extent they should be divided into classes.

The only ground for disqualification is the use of any decorative material not contained in the bundle.

W. M. O., Willimantic, Conn.

## The Relay Race

**T**HE water relay race is the same as a land relay race in that the contestants are divided into teams, whose members race one at a time, the second boat taking up the race after the first boat finishes, etc. The first boat from each team is supplied with a stick of wood or a cork, which is known as a floater. When the first boat of a team completes its lap, the floater is thrown overboard and the second boat of the team must then pick the floater from the water before it is allowed to continue the race. The first team to have all its members in turn pick up the floater and then complete the lap wins. The rules follow:

1. The teams shall be so divided that their approximate speeds are equal.
2. Only one person on each boat may reach for the floater and he must use nothing but his hands.
3. The floater must be dropped within fifteen yards of the starting line.
4. The course will be triangular and of any given length.

Picking up the floater is much harder than it sounds, for the slightest chop may cube the difficulty, while the bow wave is a constant menace. Thus, if the teams are anywhere near evenly matched, some skill combined with a little luck is perfectly capable of turning the tide of victory.

J. R. M., Chestnut Hill, Mass.

## An Exchange Event

**E**ACH contestant draws a check on which is a number. With the check he receives a box about five inches square, wrapped in blank paper. Under the outside wrapper the box also is numbered, the number, however, being altogether different from the check the contestant holds, although identical with the number held by some other boat. The contending boats start out, well bunched at a moderate speed, until they receive a signal from the committee boat, upon which each contestant removes the blank paper from the box he holds. He then exchanges boxes with the nearest boat. If he finds on examination that the number of the box he has just received corresponds to that of the check he holds, he at once opens the box (if not, the exchange is continued from boat to boat until the correct box is obtained).

On opening the box he finds a sheet of paper containing written instructions to make all speed to some certain spot where he will find a block of wood or some similar object upon which is printed the same number as the check and box he now holds. Upon securing this he returns to the starting point. The first boat in with the correct check, box and block wins, provided he has violated none of the following conditions:

Calling out the number of the box held or wanted will result in disqualification, as will receiving more than one box at one time.

Each contestant wishing to exchange boxes with another boat must first signal said boat and receive a favorable return signal before the exchange can take place.

Motors must be kept running and boats in motion during exchange.

Exchange is effected by tossing boxes from both boats simultaneously.

Boxes should be numbered in small figures, so as not to be distinguishable during exchange.

An observer should be placed aboard each boat.

W. M. O., Willimantic, Conn.

## Logomachy Plus H'O

**A** QUANTITY of wooden blocks is prepared, each block bearing one letter of the alphabet, and these blocks are scattered upon the surface of the water by the committee boat. This accomplished, the committee boat whistle is sounded and on hearing the signal the contestants start their motors and go in search of the lettered blocks. The object of this race is to form a word of (we will say) four letters from the blocks taken from the water.

The first boat to complete a word of four letters and get it to the judges' hands wins. Observers should be placed in several of the contending boats, as rules of the road are in force and any infraction of them will disqualify the offender. There will be prizes awarded to the first, second and third boat to finish. Immediately after the third boat has finished a gun is fired to recall the remainder of the contestants.

W. M. O., Willimantic, Conn.



# New Things For MOTOR Boatmen

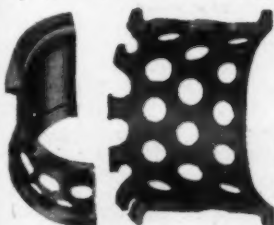
[Each month many new parts, attachments and fittings, interesting and invaluable to the owners of large and small motor boats, are added to the devices already on the market. Announcements of these articles come to us in such numbers that in order to introduce all of them to our readers we have been obliged to omit descriptions and publish only illustrations with short explanatory captions. In doing this, however, we urgently invite our readers to write us for complete information, as we shall take the greatest pleasure in providing it together with the manufacturers' names and addresses. Do not hesitate to ask us, as we have made special arrangements to take care of this branch of our correspondence and are able to give you accurate information with the greatest promptness.—Editor.]



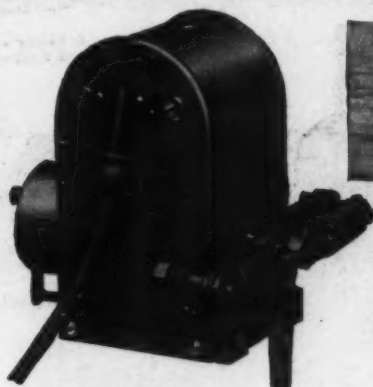
A 15-foot hydroplane which is a particularly speedy craft for outboard motor boating



A 14-foot steel outboard motor boat which is declared unsinkable



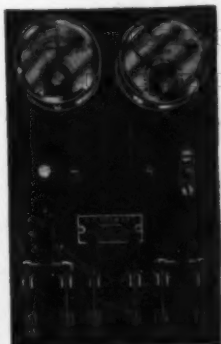
Ryerson skeleton reinforcements give strength to babbitt bearings



A new oscillating type magneto especially designed for easy starting



Besides other improved features, the 1916 model of this motor has a side steering lever which gives plenty of room on the rear seat



A complete, but simple, marbled switchboard



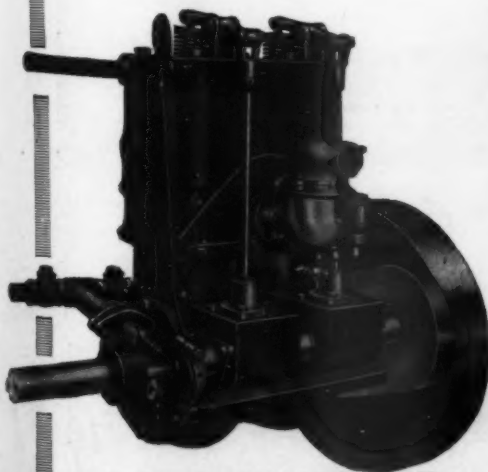
An Economy valve which effects a twenty per cent. saving in gasoline



A self-winding electric clock which will help you to keep your appointments



A new oil gas producer for attachment to gasoline motors



An interesting two-cycle machine with overhead exhaust valves



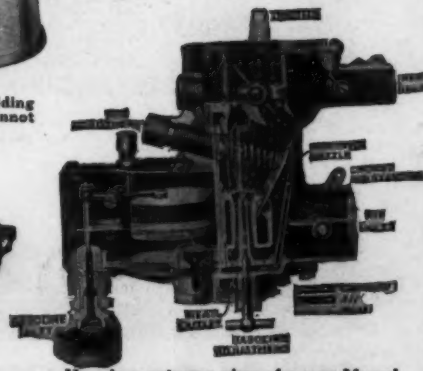
Master plugs now have a new Calorite insulator



An oil vapor riding light which cannot blow out



An efficient water brake to determine in shop tests the exact developed power of an engine



Here is a cutaway view of a new Marvel carburetor. Study it out for yourself

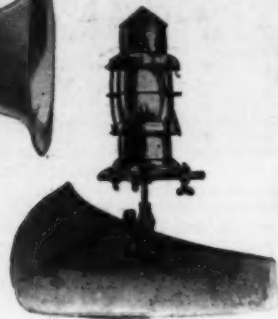
Do not fail to write to the editor if you desire information concerning any of the above new things



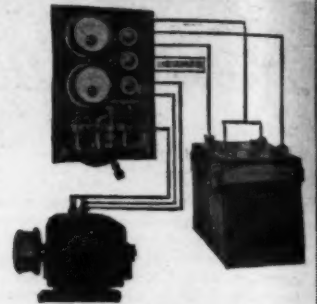
S.S. type direct reading ohmmeter for use on motor yachts fitted with wireless systems



An electric horn which will open drawbridges for you



A handy combination lamp and flagpole canoe bracket



One of the No-Automatic-Device lighting systems for motor cruisers



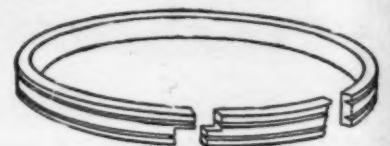
A can of M.B.S. elastic caulking cement



Liquid Veneer, for use on all painted, varnished and enameled woodwork



The handsome Delano 12-foot mahogany yacht tender



A new ring for increasing the power of your motor



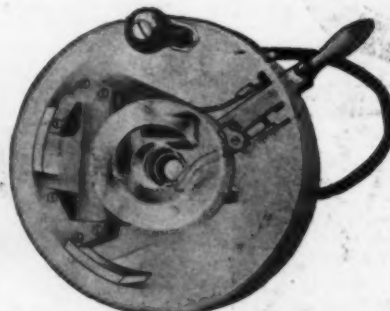
The Wicks releasing devices for lifeboats may prove valuable when seconds are precious



Two views of an improved planking and decking clamp



The Little Giant electric stern light



Phantom view of a flywheel magneto for outboard motors



Master batteries are made water- and weather-proof



Transformer coil for use with low tension magnetos



Sectional view of a vacuum bottle, which is especially protected against vibration



Attractive 13-foot mahogany yacht tender with accommodations for eight persons



The Keystone outboard motor boat and yacht tender



Runabout fitted with the attractive Albany one-man top



A square-sterned canoe designed especially for use with detachable motors

A plug which is said to give your motor more power

Do not fail to write to the editor if you desire information concerning any of the above new things



# From Motor BOATING Readers

This department of MoToR Boating is maintained for the purpose of giving its readers opportunity to ask questions, reply to other correspondents' communications and submit ideas, suggestions, opinions or experiences which may be of interest and assistance to motor boatmen. There are no rules governing the department other than that postage must be enclosed when an answer by mail is desired, and that the name and address of the writer must be given in each instance. No anonymous contributions will be considered for publication, but initials or a pseudonym will be substituted for the writer's own name if the request be made. The editor does not, of course, hold himself responsible for statements made or opinions expressed by contributors to this department.

## Motor for an 18-Footer

To the Editor of MoToR Boating:

Can you advise me of the most suitable type and power of motor to get the best results from an 18½-foot family launch of 52-inch beam with ¾-inch cypress planking? I am not looking for high speed, but would like to make about 12 miles an hour.

D. F. L., Watertown, N. Y.

[We believe that in order to obtain a speed of about 12 miles an hour, you should have in the vicinity of 12 to 15 horsepower. A motor of either two- or four-cycle type may be chosen, according to your own personal preference. If it is of the two-cycle type, one of two cylinders will work out the best, but if a four-cycle motor is chosen, then there are several three- and four-cylinder motors of this power which will work out very satisfactorily indeed.]

A suitable two-cycle motor should not weigh over 400 pounds, and one of the four-cycle type not over 600 pounds. They should develop their power at between 600 and 800 r.p.m. in your case.]

## Excellent Construction for a V-Bottom

To the Editor of MoToR Boating:

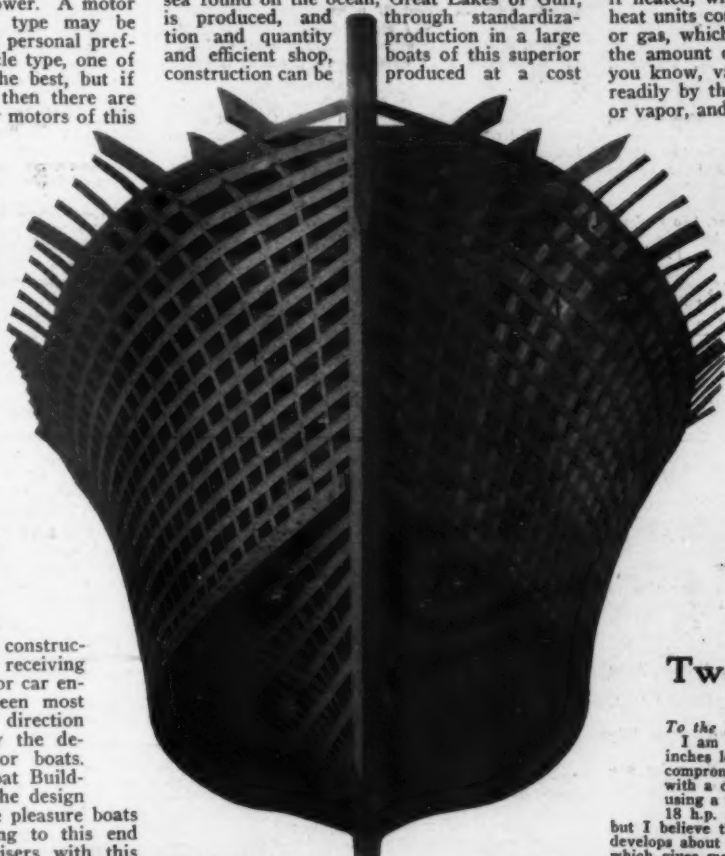
The accompanying illustration shows the method of construction used by the Great Lakes Boat Building Corporation, of Milwaukee, Wis., in its V-bottom type as well as in boats built under special contract. While the standardization of design and construction of motor cars has been receiving the undivided attention of motor car engineers, whose success has been most marked, little progress in this direction seems to have been made by the designers and builders of motor boats. However, the Great Lakes Boat Building Corporation, engaged in the design and construction of high-grade pleasure boats of all types, has been working to this end in the standardization of cruisers with this special method of hull construction, which represents the latest practice in hull work.

It will be noted in particular that this type of construction calls for the use of a combination of sawed frames, bent frames and longitudinal seam battens. Heavy oak sawed frames are used at intervals ranging between 36 and 48 inches, depending upon the size of the boat. These frames are securely bolted to the keel and heavy chine piece. Longitudinal seam battens are then let into the frames, forming a backing for each plank seam on the bottom and sides, this being the form of ordinary V-bottom construction. In addition to the above, steam bent oak frames, closely spaced on from 4 to 6 inch centers are then bent in over the seam battens, and the whole construction tied together by means of copper rivets. Backing pieces are then carefully fitted on the face of each sawed frame between the seam battens, bringing the surface out flush with the inner face of the planking. The planking is then secured to sawed and bent frames and seam battens with copper rivets closely spaced. This affords an absolutely solid backing for the planking, and has the advantage of providing a frame construction in which no portion of the planking is left unsupported for an area larger than the palm of one's hand. By means of this construction,

an exceedingly strong structure is produced without being excessively heavy.

Special care is exercised in the selection of materials, the keel, chines, frames, ribs, battens, planking, sister keelsons and engine stringers being exceptionally heavy for this type of boat, the material being obtained in long continuous lengths to avoid unnecessary butts and scarfs. A hull which can be absolutely depended upon to hold together in any sea found on the ocean, Great Lakes or Gulf, is produced, and through standardization and quantity production in a large boats of this superior construction can be produced at a cost

various grades of gasoline that the particular engine and the particular carbureter employed are able to make use of. If the motor can use only fifty per cent. of the heat units in the low grade gasoline, against ninety per cent. in a high-grade gasoline, you will see that it will be more economical to use the latter. The heating of the fuel and the gases is another important item which must be considered also. Both the fuel and the gas will expand if heated, which will diminish the number of heat units contained in a given volume of fuel or gas, which will be dependent entirely upon the amount of heat applied. Furthermore as you know, vaporization is accomplished more readily by the application of heat to the fuel or vapor, and the whole question becomes simply a balance between the proper amount of heat to apply and the number of heat units in the expanded fuel or vapor. If much heat is applied, the vapor becomes accentuated and contains a relatively small number of heat units. On the other hand, if the vapor or fuel is not heated there will be a larger number of heat units in a given volume of the fuel or mixture, but the carbureter or engine will not be able to vaporize all of these, and even after the mixture is vaporized, condensation is likely to take place before the vapor reaches the combustion chamber of the engine. Therefore, taken altogether, you will see that the whole question is a very complex one which cannot be answered in a few words. Each case must be analyzed by itself and the proper balance struck.]



Unique form of frame construction for a V-bottom craft

comparable with much less substantially built hulls including those in which exceptionally heavy materials are used wastefully at a sacrifice of speed and propulsion efficiency.

G. L. B. B. C.

## Power From the Different Grades of Fuel

To the Editor of MoToR Boating:

Will you kindly answer the following question: Will a four-cylinder, four-cycle engine running 800 r.p.m. using gasoline of 55° test, require more fuel than the same engine running 800 revolutions on 68° test gasoline?

Will the horsepower be the same using the two different grades of fuel when the engine is run at 800 r.p.m.?

B. H., Detroit, Mich.

[The subject is such a broad one, depending on so many factors of each particular engine, its design, adjustment of the carbureter, etc., that we are afraid any attempt we might make to answer your letter would not give you much information.]

As you probably know, there are more heat units in the lower grade of gasoline than there are in the higher grade, and it is simply a question of the number of heat units in the

## Two-Cycle vs. Four-Cycle

To the Editor of MoToR Boating:

I am the owner of a cabin cruiser 34 feet 8 inches long, by 9 feet 6 inches beam, having a compromise stern and being rather heavily built with a draft of about 3 feet. At present I am using a three-cylinder, two-cycle engine rated at 18 h.p. and supposed to turn over 750 r.p.m.; but I believe that it turns over about 550 r.p.m. and develops about 15 h.p., using a 22 x 22-inch propeller which gives me a good 8 miles under fair conditions. (The bore and stroke are 5 x 5 inches.) I am thinking of buying a new four-cycle engine of two cylinders, supposed to be of the heavy-duty type. The cylinder measurements are 5 3/16 x 6 1/4 inches, and turning a 22-inch turbine and rated at 10-12 h.p., the maximum power is developed at 450 r.p.m. Will this latter power plant give me any advantage over the former? If so, what pitch propeller would be the best to use? My boat is of the round-bottom type.

H. J. B., Jersey City, N. J.

[We fail to see any great advantage which can be obtained with the motor which you have in mind over the one which you are using at the present time. A properly designed two-cycle motor having three cylinders, with a bore of 5 inches and a stroke of 5 inches, should develop in the neighborhood of 20 h.p. The above is assuming, of course, that this motor is properly designed and in good condition. The new motor which you have in mind cannot possibly develop more than 13 h.p. at 450 r.p.m., and will probably not be as satisfactory from a speed standpoint as is your present one. However, there may be other considerations which you have in mind which you have not told us about, which would make it advisable to install this 10-12 h.p. heavy-duty motor.]

The proper pitch for a propeller to use with a motor of this kind turning 450 r.p.m. to obtain a speed of about 8 miles an hour would be 27 inches.]

# Important Racing Events in June

The Conditions Governing the Block Island and Albany Long Distance Races for Cruisers—  
The First Inter-Club Invitation Cruise to be Held on Long Island Sound

## Standardized Conditions for Long Distance Races

The following particulars as to classes, measurement, crew, etc., are to apply to four long distance races scheduled for 1916, viz:—New York Athletic Club's Block Island Race, June 24; New York Motor Boat Club's New York-Albany and Return Race, July 1; Colonial Yacht Club's Cornfield Race, July 8, and the Columbia Yacht Club's Ambrose-Scotland Race, July 15.

### CLASSES

Class A—Express cruisers as defined by Rule VI, Division II, A. P. B. A. 1916 rules, of less than 60 and more than 30 feet l. o. a.

Class B—Cruisers as defined by Rule VI, Division I, A. P. B. A. 1916 rules of less than 50 and more than 25 feet l. o. a. and whose rating is not less than 90 per cent. of the waterline length. Boats of less rating will be handicapped on this minimum.

### MEASUREMENT

Rule V., 1916, A. P. B. A. All competing boats shall be measured by the official measurer of the A. P. B. A., Frederick K. Lord, 120 Broadway, New York City, or by one of the following assistant measurers: F. W. Horenburger, New York Motor Boat Club; L. Huxtable, Colonial Yacht Club; C. O. Gunther, Columbia Yacht Club; R. M. Haddock, New Rochelle Yacht Club.

### CREW

Rule XII, 1916, A. P. B. A. Professional pilots shall not be included in the crew in any capacity. Names and occupations of crew shall be handed to the committee in writing at least one hour before start.

### EQUIPMENT

Each boat must carry a suitable tender, two anchors and cables, lead line, compass, charts, bucket and be fully equipped according to the 1916 A. P. B. A. rules.

### POWER AND FUEL

Explosive engine or engines operated by gasoline, kerosene, alcohol or producer gas. Any ingredient to increase the power of fuel prohibited. An extra supply of fuel may be taken on en route, provided the boat is making no headway. (Use of sails prohibited.)

### TIME ALLOWANCE

A. P. B. A. Rules for 1916.

### PROTESTS

Rule XXIII, 1916, A. P. B. A.

### PRIZES

First prize, second prize, if five start; third prize, if seven start. An A. P. B. A. record certificate will be presented to the boat making the best corrected time in each class.

### SPECIAL TROPHY

A special trophy for classes A and B competing as one division on their actual rating to be known as the Long Distance Championship of New York City is offered to boats competing in any or all of the following races:

- New York Athletic Club, Block Island Race, June 24.
- New York Motor Boat Club, Albany Race, July 1.
- Colonial Yacht Club, Cornfield Race, July 8.
- Columbia Yacht Club, Ambrose-Scotland Race, July 15.

The winner shall be determined by the point system, as specified in the A. P. B. A. Gold Challenge Cup Declaration of Gift.

## New York A. C.'s Ninth Annual Race to Block Island, June 24

### COURSE

From Whortleberry Island to the West Harbor of Block Island, disregarding buoys. Distance 100 nautical miles.

### STARTING LINE

Between two boats flying club flags anchored to the East of Whortleberry Island.

### TIME OF START

Warning Signal: Class A, 11:50 A. M. Class B, 3:50 P. M.

Preparatory Signal: Class A, 11:55 A. M. Class B, 3:55 P. M.

Starting Signal: Class A, 12:00 Noon. Class B, 4:00 P. M.

### FINISH

Leave committee boat (flying club flag and at night red and white lights), inside of West Harbor on either hand. (In order to check possible errors, each boat will take its own time when light on inner end of West Harbor Breakwater bears South.)

### INSPECTION

Boats must report at N. Y. A. C. yacht house, Travers Island, on day of race for inspection. Class A before 9 A. M.; Class B between 1 and 3 P. M.

### ENTRIES

Close noon June 20, at which time measurement certificate must be received, and should be sent to H. A. Jackson, Jr., Chairman Regatta Committee, 409 Pearl St., New York City.

## Conditions Governing Motor Boat Racing During Long Island Sound Cruise.

June 26-30, 1916

Open to boats enrolled in any club in the Yacht Racing Association of Long Island Sound.

### CLASSES

A. Express cruisers—35 feet and over, l.o.a.

B. Cruisers—30 feet and over, l.o.a.

Note: Express cruisers to be those boats qualifying as express cruisers under the 1916 A. P. B. A. rules. Cruisers to be those boats not falling in Class A and having cabin entirely closed in and accommodations and outfit necessary for living aboard. All racers to carry or tow a suitable tender.

### COURSES

Monday, June 26—Start from Seawanhaka Corinthian Yacht Club, race to Indian Harbor Yacht Club. Finish line off Little Captain Island.

#### Express Cruisers

From starting line to and around buoy No. 13 off Eatons Neck, to and around bell buoy No. 20, off Georges Rock to finish line, passing all buoys to starboard. Distance about 27 miles.

#### Cruisers

From starting line to and around can buoy No. 13, off Eatons Neck to finish line. Distance about 16 miles.

Tuesday, June 27—Start from Indian Harbor Yacht Club, race to Huntington Yacht Club. Starting line off Great Captain Island. Finish line in Huntington Bay off Beaux Arts.

#### Express Cruisers

From starting line to and around bell buoy No. 19 off Prospect Point, to and around can buoy No. 13 off Eatons Neck, to finish line, passing all black buoys to starboard. Distance about 27 miles.

#### Cruisers

From starting line to and around bell and spar buoys off Matinick Point to finish line, passing bell buoy off Lloyds Neck to starboard. Distance about 16 miles.

Wednesday, June 28—From Huntington Yacht Club to Black Rock Yacht Club. Starting line Huntington Bay. Finish line off red spar buoy No. 2 off Black Rock Light.

#### Express Cruisers

From starting line to can buoy No. 13 off Eatons Neck, passing same on starboard hand, to and around Stratford Shoal Light and buoys Nos. 2 and 1 to and around bell No. 16 off Stratford Point to finish line. Distance about 27 miles.

#### Cruisers

From starting line to finish line, passing can buoy No. 13 on starboard hand. Distance about 27 miles.

Thursday, June 29—From Black Rock Yacht Club to Stamford Yacht Club. Starting line off red spar buoy No. 2 off Black Rock Light. Finish line off Stamford Light.

#### Express Cruisers

From starting line to and around Misery Shoal spar buoy No. 11, passing same on starboard hand, to finish line. Distance about 32½ miles.

#### Cruisers

From starting line to finish line, passing all red buoys on starboard hand. Distance about 17 miles.

Friday, June 30—From Stamford Yacht Club to Manhasset Bay Yacht Club. Starting line off Stamford Light. Finish line in Manhasset Bay off Manhasset Bay Yacht Club.

#### Express Cruisers

From starting line to and around can buoy No. 13, off Eatons Neck, passing same on starboard hand to finish line, passing all black buoys on port hand. Distance about 27 miles.

#### Cruisers

From starting line to Matinick Point bell and spar buoys, passing same on starboard hand to finish line, passing black buoys off Prospect Point, Sands Point and Barker Point, on port hand. Distance about 16 miles.

Note: Motor yachts must give way to leeward in every case to sailing yachts and not pass within 200 yards of any sailing yacht competing in a race. Failure to observe this passing rule will be cause for disqualification.

### TIME OF START

Class A (express cruisers) to start one and one-half hours after the first class for sailing yachts is sent away. Class B (cruisers) to start five minutes after Class A.

Note: During the time assigned for the starting of the sailing yachts it is imperative that there shall be no interference by the motor yachts. Motor yachts must not enter the zone within 300 yards of the starting line during this period.

### STARTING SIGNALS

Warning signal: hoisting of blue peter ten minutes before time to start for express cruisers.

Preparatory signal: five minutes before start of Class A, hoisting of blue ball.

Start Class A: lowering blue ball and hoisting red ball.

Start Class B: lowering red ball.

## HANDICAPS

June 26—A. P. B. A. handicaps.

June 27—Viking handicaps.

June 28—Scratch race.

June 29—Past performance handicaps.

June 30—Past performance handicaps with penalties.

Note: Boats to be permitted to compete on the fourth or fifth days must have competed in one or more of the first three days.

## ENTRIES

Entries must be made in writing and must reach the committee on or before June 19, 1916. Boats competing on the first or second days must file with the committee previously to the start of the race an A. P. B. A. certificate of measurement. Send entries to C. F. Chapman, 119 W. 40th St., New York City.

## RACING NUMBERS

Motor yachts competing in any of the races must display from the bow staff a racing number which will be furnished by the race committee.

## PRIZES

First prizes will be awarded to the winners on corrected time in each day's race according to the above method of handicap. Second and third prizes will be awarded if a sufficient number of boats start. Series prizes will be awarded based on the boat's record for the week. The winner of the series prizes is to be determined by the point system, whereby each boat starting and finishing a race receives one point for finishing, and one additional point for each boat it defeats, the winner being the boat securing the highest aggregate number of points in all races during the week. In computing points, the maximum number of different boats starting shall be deemed racing each day and those that do not start shall be counted as defeated boats.

## SPECIAL INSTRUCTIONS TO MOTOR YACHTS

In the event of any of the sailing races being called off for any reason, motor boat owners will be expected to tow the sailing yachts to the next scheduled port. All sailing races will be called off at 5 P. M. each day—in which event motor yachts must get under way and tow sailing yachts to port.

## New York-Albany and Return Race, July 1, 1916

### COURSE

From the New York Motor Boat Club house, Hudson River at 147th St., to the railroad bridge off the Albany Yacht Club house, Albany, N. Y., and return, a distance of 235 nautical miles.

### START AND FINISH LINE

Will be directly in front of the clubhouse and between flagstaff and committee boat flying two club flags and at night one red and one green light vertically placed.

### TURNING MARK

West pier of railroad bridge off the clubhouse of the Albany Yacht Club at Albany. Pier of bridge to be left on port hand.

### TIME OF START

Warning Signal: One gun, 7:50 A. M.  
Preparatory Signal: Two guns, 7:55 A. M.  
Starting Signal: One gun, 8:00 A. M.  
Date July 1, 1916.

### TIME OF FINISH

All boats must finish within 40 hours.

### SPECIAL CLASSES

The Regatta Committee will provide additional classes upon being assured of at least three starters for any class.

Note: Additional classes which may be provided and not sanctioned by the A. P. B. A. will not be required to carry dinghy, lead line, compass, chart, etc., and requirements as to glass cabins, fixed plumbing, self-bailing cockpits, hatch coamings, fixed tanks, etc. may be waived in the unsanctioned classes.

### INSPECTION

All boats entered must report to the Regatta Committee at the clubhouse not later than 9 P. M. on June 30.

### ENTRIES

Entries close June 29, 1916, at 6 P. M., and must be in writing, accompanied by rating certificate. An entrance fee of \$5 must accompany each entry, which amount will be refunded to those starting in good faith.

Entries should be sent to H. J. Allen, 548 W. 164th St., New York City.

The committee reserves all rights.

### ANCHORING

Racers may stop at any place for supplies or repairs, but any boat proceeding except under its own power will be disqualified.

### LOG

Each captain must report the time of passing Poughkeepsie Bridge in each direction, time of turning at Albany and time of finish, and this record must be handed to the committee within twelve hours after finishing.



# Yard and Shop

## Calendar

June 3—Columbia Y. C. Races for All Classes of Motor Boats  
 June 24—New York to Block Island  
 June 26—Long Island Sound Cruise  
 July 1—Annual Race, New York to Albany and Return  
 July 1—Rhode Island Y. C. 100-Mile Race  
 July 4-6—Mississippi Valley Power Boat Association Regatta  
 July 8—New York to Cornfield Lightship and Return  
 July 15—New York to Ambrose Channel Lightship and Return  
 July 16-21—Put-in Bay Regatta  
 July 22—New York and New England Race  
 August 15-16-17—Races for Thousand Islands Championship Challenge Cup, Alexandria Bay  
 September 2-4-5—Gold Cup Races at Detroit

### An Alabama Cruiser

Camp Palms, a new standardized 36-foot hunting cabin cruiser, built by the Great Lakes Boat Building Corporation, Milwaukee, Wis., is an interesting illustration of Sterling engine efficiency. This very heavily constructed cruiser is owned by J. C.



A 26-foot V-bottom runabout built by Wm. P. Shoemaker, of Summerfield, N. Y., from semi-erected frame, planking, finishing materials and fittings furnished by the Valley Boat Co.

Wright, of Roanoke, Ala., and was designed especially for Gulf Coast use. The owner's stateroom is forward and has a fully equipped lavatory and galley adjoining, aft of which is a main cabin with seat berth arrangements similar to two sections of a standard Pullman car. There is also a large and inviting bridge and cockpit. This cruiser developed the surprising speed of 14.5 m.p.h. in her trial runs on Lake Michigan with her four-cylinder 5½ x 6¼ Sterling turning at the conservative speed of 850 r.p.m.

**A Houseboating Trip on the Columbia**  
 The far-famed Columbia River, along the border



Seeing America first with an Evinrude motor. Two men, F. H. Snyder and Capt. W. F. Goodrich made a 200-mile trip on the Columbia River with their flat-bottomed barge, and never experienced a moment's trouble from their 2 h.p. machine

of Oregon to the Pacific, because of its interesting and unusual scenery, was selected not long ago by F. H. Snyder and Capt. W. F. Goodrich as a subject for their educational animated travelogue series. An interesting picture taken on their trip is reproduced herewith, showing Needle Rock in the foreground and Memorial Island in the distance. The boat they used, which is 9 x 24 feet, was powered with a 2 h.p. single-cylinder Evinrude motor.

"We fitted our boat with the Evinrude because we believed it to be the most practical outboard motor we could get," says Capt. Goodrich. "All kinds of weather were experienced in going from fresh water into the lower river tides. Sometimes the engine became stuck in the mud and it frequently hit floating wood. But for forty days it never missed a stroke, and it frequently pulled us out of a tight place where a less dependable engine might have jeopardized our safety."

"We learned to rely on it absolutely, so much so that it sometimes seemed an effort to put gasoline in the tank when it became empty. In all that trip no repairs were necessary. The automatic reverse aided us greatly in making difficult landings, and in turning around in some of the narrow streams and sloughs we got into, and not a day passed that it was not used at some time or other."

"The Evinrude could hold its own against the current in almost any part of the river with that big boat. We frequently saw Evinrudes on rowboats making good speed up river."

### Kermath in Tasmania

One of the accompanying illustrations shows a 32-foot motor boat with 7-foot 7½-inch beam which was constructed by D. L. McWilliams, of North Hobart, Tasmania, and is powered with a 12 h.p. Kermath motor equipped with a kerosene carburetor. The boat has a speed of 8 m.p.h. with the engine running at 700 r.p.m., and the owner has written to the manufacturers expressing his complete satisfaction with the power plant.

### Gray Motor Emerges from Long Bath

It has been brought to our attention that a large motor boat, belonging to W. M. and G. T. Schneider, of Natchez, Miss., which sank last summer, has been recently raised and put in commission. This boat, which was under water for nine months, was powered with a 24 h.p. Model T Gray motor. According to the owners the engine is now running as well as it ever did without any repairs whatever beyond a thorough cleaning.

### The Test of Service

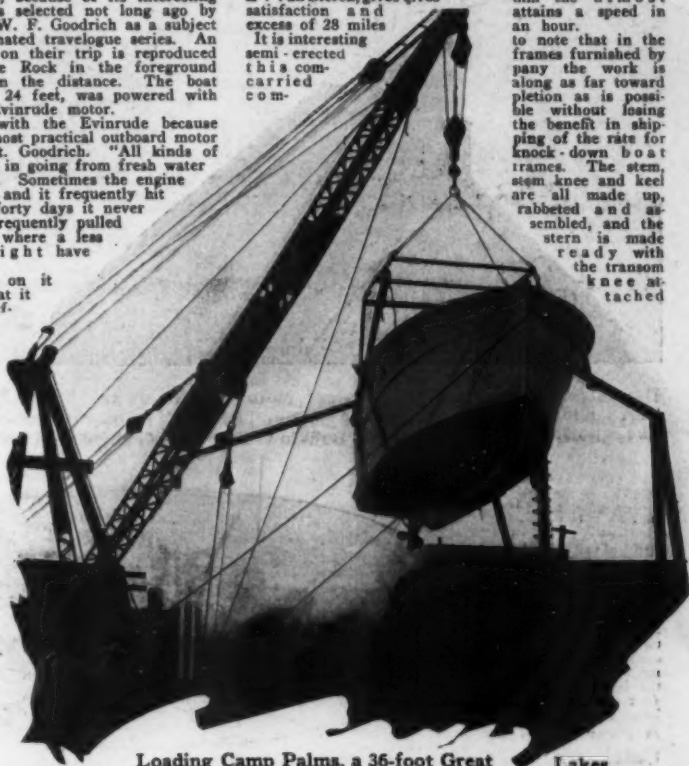
The real way to judge the character and endurance of a motor is by actual experience, and one of the instances which illustrate the satisfaction which Thorobred owners enjoy is contained in a long letter recently written to the Red Wing Motor Co., of Red Wing, Minn., by D. R. Shackford, warrant machinist, U. S. Navy, retired, of Norfolk, Va. Mr. Shackford is the owner of one of the first Model F Thorobreds turned out, and during the last two years has given her almost constant service, averaging as much as 50 miles a day. Trips from 200 to 500 miles in length were considered nothing out of the ordinary, and yet in all this running the owner declares that he has never spent one cent for repairs. Service like this breeds a satisfied contentment in the heart of an owner.

### Naomi, a V-Bottom Valley Runabout

One of the accompanying pictures shows the pleasing and satisfactory results obtained by Wm. P. Shoemaker, of Summerfield, N. Y., in building a 26-foot V-bottom runabout from the semi-erected frame and finishing materials furnished by the Valley Boat Co., of Saginaw, Mich. Mr. Shoemaker has written the manufacturers that his boat, which he put together himself and which has been equipped with a Model

E-4 Van Blerck, gives gives satisfaction and excess of 28 miles

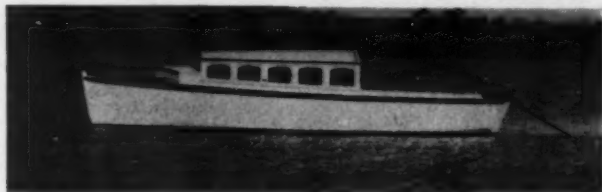
It is interesting semi-erected this com-carried com-



Loading Camp Palms, a 36-foot Great Lakes standardized cruiser, for shipment to J. C. Wright, Roanoke, Ala.

and fitted to the keel. The mold ribs are permanently riveted with copper rivets and notched for the battens (which are furnished) and then bolted to the keel. In knocking down for shipment the ribs are removed from the keel, and the stem and transom disconnected, so that it is a simple matter for the purchaser to reassemble the frame according to the maker's instructions.

This 26-foot boat is declared to trim as nicely at low speeds as at high.



The 32-footer constructed by D. L. McWilliams, of Hobart, Tasmania, from American plans and powered with a 12 h.p. Kermath. The motor is fitted with a kerosene outfit and gives an 8-mile speed

### Sutcliffe Madsen Co. Smoked Out

Because of a bad fire in the fifth and sixth floors at 136 Liberty St., New York City, The Sutcliffe Madsen Co., which formerly occupied this building, has been obliged to move to 120 Liberty St., a few doors down. Fortunately this enterprising concern suffered very little loss and is now in a position to take care of the season's requirements. The firm specializes in electrical equipment for motor boats, yachts, etc., and represents the Henricks Magneto & Electric Co. and the Perflex waterproof ignition system.

### Miller Represents Michigan

Chas. E. Miller, whose home office is at 97 Reade St., New York City, has put in a large stock of the famous Michigan reverse gears, propeller wheels, universal joints, underwater exhausts and a large line of motor boat accessories in all his different branches in New York City, Brooklyn, Buffalo, Boston, Springfield, Detroit, Cleveland, Philadelphia, Atlanta, New Orleans and Newark. His recent catalogue, which covers the complete line of Michigan motor boat accessories, has a circulation of over 100,000.

### Swapping Mounts in Midstream

Doc. W. H. Balluff, owner of Wilmar, one of the Chicago Motor Boat Club fleet, has deserted the snail class and is now seeking the company of the speed bunch. This is all due to the fact that he has just recently discarded his old 12 h.p. engine and is replacing it with a brand new 24 h.p. four-cylinder Anderson.

### Byrne-Kingston & Co., Enlarge

In addition to their old building, Byrne-Kingston & Co., of Kokomo, Ind., have recently erected three



Dauntless, a handsome 78 x 14-foot motor cruiser owned by F. S. Terry and B. A. Tremain of Association Island, Thousand Islands. She is powered with two 50-80 h.p. Buffalo cruiser and runabout engines

new ones. Two of these are one-story edifices, 90 x 120 feet and 55 x 160 feet, respectively, and the third is a two-story building measuring 25 x 120 feet. These are in addition to the large administration building which was completed a year or two ago, and their construction has been made necessary by the increased demand for Kingston car-bureters and ignition.

#### A New Catalogue

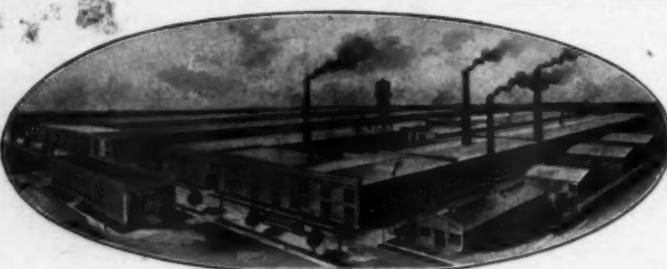
The Model Yacht Emporium, of Liverpool, N. Y., has just issued a concise catalogue descriptive of four of its more popular runabouts. These boats range in length from 25 to 30 feet and in price from \$350 to \$400, without power. One of the most attractive is the 25-foot open boat designed for all around use, although showing marked speed. She is fitted with automobile control and her power plant is a 30 h.p. Barber engine.

#### The Houseboat Willena

A photograph on this page shows the 112-foot houseboat Willena, which was built by the Erickson Boat Wks., of Chicago, Ill., for W. H. Fahrney, of that city. She has a beam of 22 feet 9 inches, and many large and attractive compartments have been included in her layout. One of the most unusual of her features is an 8 x 16-foot garage, which can be entered from either side of the boat. The vessel is fitted with an electric capstan, motor lifeboat and tender, and carries as a regular crew, captain, engineer, chef, deckhand and chauffeur. Most important of all, however, are the two 50 h.p. four-cylinder Anderson engines equipped with kerosene attachments which turn two independent stern paddle wheels and drive the boat at a speed of 7 or 8 m.p.h.



The J-M fire extinguisher which is mentioned in this section



View of the new factory occupied by Byrne-Kingston & Co., of Kokomo, Ind. Three buildings have recently been erected to take care of increased business

and ship brokers, have removed their offices to 17 Battery Place, New York City.

#### Van Blerck Busier Than Ever

As an indication of the amount of work being turned out by the Van Blerck Motor Co., of Monroe, Mich., a recent letter from Morris M. Whitaker, who is personally testing each one of this firm's high-speed power plants, is particularly interesting. In his letter, which is addressed to Melchior, Armstrong & Dessau, export agents, of New York City, Mr. Whitaker states that he tested twenty-one 6 x 6-inch Van Blerck motors within a period of seven working days, and that the entire number underwent their five-hour continuous-run test successfully, in each case developing substantially more than the guaranteed horsepower. The filling of a single order in this period of time gives an idea of the capacity of the Van Blerck factory for manufacturing engines in quantity.

#### New Catalogue of Charts and Coast Pilots

A new catalogue of charts, Coast Pilots and Tide Tables has just been published by the Government and can be obtained free of charge by addressing the Superintendent of the U. S. Coast & Geodetic Survey at Washington, D. C. As most boat owners know, this catalogue is invaluable to those who do any extended cruising.

#### Water Craft Co. Continues Under New Ownership

We are informed that the partnership between J. E. Crider and J. E. Hyde, former owners of the Water Craft Co., of 221 Fulton St., New York City, has been dissolved and that Mr. Crider is now sole owner. The business will be continued at the old address under the name of the Water Craft Co., while another of Mr. Crider's enterprises, the Boat & Auto Supply Co., with showrooms and warehouses at Bayonne, N. J., will be merged with the Water Craft Co.

#### Whittelsey & Whittelsey Move

Announcement has recently been made that Whittelsey & Whittelsey, naval architects, engineers

#### Courses in Foreign Trade Announced

Dr. Edward E. Pratt, Chief of the Bureau of Foreign and Domestic Commerce, of the U. S. Department of Commerce, is the director of an educational course in foreign trade which has just been announced. Associated with Dr. Pratt in the preparation of the course are several men prominent in American export activities, and it is the opinion of many that their combined efforts will prove of valuable assistance to the American manufacturers who desire to enter the export field. The course covers a treatment of the various factors entering into export marketing, such as world trade economics, export policies, export houses, direct exporting, the export salesman, shipping, financing, foreign and home law and importing. The course is supplied to corporations and firms at moderate cost for study by their employees, and to others interested in foreign trade. It is being issued by the Business Training Corporation with offices at 185 Madison Ave., New York City.

#### Scripps Foreign Language Catalogues

In order not to deny any of its customers the pleasure of learning the merits of Scripps engines in their native tongues, the Scripps Motor Co., of Detroit, Mich., has just issued three catalogues in French, Spanish and Portuguese, respectively. While these are merely translations of the current American edition, the work has been done by experts who know how to serve up literary delicacies to our foreign brothers.

#### Sterling Catalogue in Russian

Not content with letting the many Sterling motors which have been sold to Russian owners do their own missionary work, the Sterling Engine Co., of Buffalo, N. Y., has had published a catalogue in the Russian language, which sets forth the many good points of these motors. This active interest in export sales, which is being shown by so many marine motor manufacturers, is a decidedly good omen for the continued success of the American industry.

#### An Outboard Motor Inboard

An interesting use to which a detachable rowboat motor has been put was recently brought to light in



The 112-foot houseboat Willena photographed at Pensacola on her way from Chicago to Palm Beach. She is owned by W. H. Fahrney who selected two 50 h.p. Anderson motors for his power plant

a letter from Orin C. Peavy, of Houston, Tex., to the Ferro Machine & Fdry. Co., of Cleveland, O. Extracts from this letter follow: "As you will see



General view of rheostats, desk control, motor generator set and switchboard enclosed in acid-fume-proof room in the new storage battery plant of the Prest-O-Lite Co., of Indianapolis, Ind.



from the picture, this Ferro engine is placed in a different position from any engine that I have ever seen. My father built the boat exclusively for this motor, and it is 17½ feet long by 4½ feet wide. The engine sets a foot and a half from the stern of the boat and a locker is built on either side. I am proud to say that I have never been towed in.

"We hit a tree growing under the water. It struck full force against the shaft of the motor, but instead of breaking the shaft it split a two-inch cypress plank and did not hurt the engine a bit."

### A Correction and a Testimonial

The Aerothrust Engine Co., formerly of Chicago, Ill., has recently moved its plant and offices to the town of LaPorte, Ind. Through inadvertence we christened this town Lockport in an article in our May issue and now desire to make the necessary correction.

The business of this concern is reported to be booming, with many orders for new motors coming in every day, and that its old models have given satisfaction may be gathered from the following testimonial from R. E. Schaum, of Zanesville, O.: "I purchased an Aerothrust motor last year and wish to state that never before have I enjoyed such a year's boating. I made many small trips through the summer, but on my vacation I certainly gave the Aerothrust a thorough test. I started from Zanesville and went down the Muskingum to Marietta, then down the Ohio to Cincinnati, a distance of 400 miles. The motor gave no trouble and created a sensation along the way. It is still in good shape, but since your 1916 model has several new improvements, including magneto ignition, I am desirous of obtaining one. What proposition could you offer on the exchange of my engine for a 1916 model."

### Not a Chinese Junk

Although the strange looking craft, shown in two of the pictures on this page, resembles it from a distance, she is not a piratical junk navigating Chinese waters, but a modern unsinkable catamaran constructed by Major Wm. Tumbidge, of Millers Place, L. I., and proprietor of the Hotel St. George, Brook-



A picturesque view of a catamaran built by Maj. Wm. Tumbidge of Miller's Place, L. I., and powered with a two-cylinder enclosed Scripps; and a "close-up" showing the construction of the craft

5¼ x 6-inch base; the Van Blerck designers were successful in doing this and the concern has built over 200 engines, all of which have gone through extremely strenuous tests. There being quite a large number of these 6 x 6-inch motors contracted for, the company has arranged for an additional supply of cylinders of this size and can now accept and fill individual orders. The prices range from \$1,127.50 for the 75 h.p. four, to \$2,640 for the 215 h.p. eight.

### A Price Paradox

We are informed that the increased cost in materials and labor and the great difficulty in obtaining both which has necessitated raises in prices of many engines has in the case of the Gray Motor Co., of Detroit, Mich., had quite the opposite effect. It appears that the Gray Co. was unable to obtain some of the necessary materials for the two-cylinder Model D, Jr., engine which was announced in this magazine a short time ago, making it necessary for the concern to withdraw this model from the market for the time being. In order, therefore, not to disappoint the many agents, boat builders and users who had taken a fancy to this motor, the company has reduced the price of the two-cylinder Model D from \$178 to \$158, or within \$10 of the list price of the D, Jr. This enables the users of small two-cylinder four-cycle engines to obtain the kind of power plant they have been looking for at an extremely low price. The Gray Motor Co. states that it prefers to take a distinct loss for the time being rather than evade its responsibility to its customers.

### New Catalogue of Aristocrat Motors

The Carson Motor Co., of Detroit, Mich., successor to the Herrmann Engineering Co., of the same city, has just issued a new catalogue descriptive of the 1916 line of Carson Aristocrat marine engines. This not only describes in detail the construction of this attractive unit power plant, but includes illustrations and testimonial letters from satisfied customers. A description of the 3 k.w. electric generator set is given as well as a list of special equipment which may be purchased in connection with the Aristocrat marine motors.

### Michigan Factory Going Full Blast

We learn from the Michigan Wheel Co., of Grand Rapids, Mich., that it is doing an unusually large amount of business with its machine shop running on full time trying to keep up with orders on the new direct-drive reverse gear which has created such a sensation among engine builders. In addition the concern is selling twice as many propeller wheels as it did last year and prospects in this line look particularly attractive for a successful season. A letter received recently from S. H. Bullock, of Kissimmee, Fla., tells in glowing terms of the success which the writer has had in navigating the weed-filled waters of the Kissimmee region with a Michigan Twentieth Century semi-weedless propeller. Those who have cruised in these waters know that a wheel which can push its way successfully through eel grass, bonnets, water hyacinth and water lettuce has true weedless properties, and yet this wheel is a speed propeller and not one of the full weedless type.

### Woman Operates Roberts Motor Successfully

In 1911 E. C. Leedam, of Cape May, N. J., purchased a two-cylinder 8 h.p. Roberts engine manufactured by the Roberts Motor Mfg. Co., of Sandusky, O., which was installed in Toyot, an 18-footer of monoplane design, which was raced extensively by Mr. Leedam in Jersey Coast races in 1912. After winning most of these races Mr. Leedam equip-

ped the motor with a muffler, and his wife has used the boat as a fast runabout ever since. It is said that she thinks nothing of taking a 100-mile non-stop run with her engine turning up 950 r.p.m. all the way.

### Wills Uses Stewart Carbureters

C. Harold Wills, factory manager of the Ford Motor Co., has installed a new power plant in his 100-foot cruiser Marold whereby he expects to drive a full 35 miles an hour. Mr. Wills is using four of the Van Blerck twin-six engines equipped with Stewart carbureters.

The Stewart device, which is manufactured by the Detroit Lubricator Company, of Detroit, Mich., is stated to be fast gaining in favor both for automobile and marine engines; while it has also made a successful entry into the aeroplane field. This carbureter has the distinction of being the pioneer of its distinctive principle—the automatic metering valve. With this feature the volume of air actually passing through the instrument automatically measures with precision the amount of gasoline admitted. The automatic metering valve depends for its action on the suction of the motor and its own weight. It is the only moving part.

Special fitness, as evidenced in exhaustive tests, is claimed for the Stewart carbureter in marine work. A feature of fundamental importance in connection with marine work is the elimination of disastrous accidents that might happen through the agency of the motor back-firing through the carbureter and thus igniting gasoline or grease that might be in the bilge of the boat.

In the Stewart carbureter all air is taken through one port and the danger from back-firing is eliminated, as any tendency on the part of the motor to back-fire causes the metering valve to recede to its seat, momentarily shutting off the gasoline and air. The valve in reality acts as a check in preventing the ignited mixture from shooting out through the air port of the carbureter.

### O U Vim, a Speedy Southern Runabout

Not all the speedy runabouts of to-day are found in the North. Far down the west coast of Florida, at Ft. Myers, is located the home of Captain Damkohler, owner of O U Vim. The captain has built up a very good charter business with this fine boat which he uses in express service on the Caloosahatchee River upon which Ft. Myers is situated.

O U Vim is 35 feet in length by 6 feet 6 inches beam and is powered with a six-cylinder Sterling engine which is four years old. The craft is finely finished with mahogany planking and is one of the handsomest boats on the Southern west coast. It is unusually dry and comfortable and the Sterling engine has enabled it to make a speed of 30 miles an hour. It can, however, be slowed down to a mile an hour for trolling purposes which is a very valuable asset, as Captain Damkohler uses the boat for fishing purposes constantly.



A 17½-foot boat owned by Orin G. Peavy, of Houston, Tex., and powered with a Ferro detachable motor. An interesting feature of the installation is the motor's location in-board a foot and a half from the stern

### New Marine Hardware Catalogue

One of the most complete and up-to-date marine hardware catalogues that has been published this year, covering everything in the marine line, has just been issued by the Motor Boat Supply Company, 1415 West Ninth St., Cleveland, O.

One of the new features is that there will be no confusing list prices such as are sometimes found. Net price sheets will accompany the catalogue, and new net price sheets will be issued from time to time to take care of the fluctuations of prices.

It has been necessary for this concern to request the postage charge of five cents, owing to the great demands for its catalogue.



A speedy 35-foot runabout owned by Capt. Damkohler, of Ft. Myers, Fla., and used in express service on the Caloosahatchee. A four-year-old six-cylinder Sterling gives her a 30-mile speed



A seaplane made by the Thomas Bros. Aeroplane Co., of Ithaca, N. Y., which recently showed a sustained speed of 82 m.p.h. under test

lyn. Being a firm believer in safety, Major Tumbidge constructed this life raft-like craft for the use of himself and his friends, and having a fondness also for reliability, he purchased a two-cylinder 4½ x 5-inch Model MD all-enclosed Scripps for power plant. The dimensions of the boat are 26 feet long by 7½ feet beam, and ten persons can be accommodated. The twin cylinders are built of wood, canvas covered, and the craft is actually unsinkable. Appropriately enough, the owner has christened her Gemini (Castor and Pollux—The Twins), and they say that his favorite swear word is "By Jiminy."

### Evinrude in the Livery Business

The boat livery business is by no means all smiles, sunshine and profits. The season is, in many cases, a short one, and a run of unfavorable week-end weather may quickly reduce the profit balance in the bank. Therefore, it behooves the boat livery proprietor to "make hay while the sun shines" and get every possible dollar in rental out of his boats during favorable weather.

That the rental of detachable rowboat motors is becoming a most important profit-bringer to the boat livery is attested by the fact that many of these equipments are now being purchased for the purpose. The Marine Equipment Company, of Los Angeles, Cal., have just sold three 1916 Evinrudes to W. C. Mardon, of Catalina Island, for use in a boat livery business he proposes to establish in Honolulu. Mr. Mardon has been employing Evinrudes very successfully in his livery business at Catalina.

At Okauchee Lake, Wisconsin, Ed. Harder has been renting Evinrudes since early in 1913. His first purchase consisted of two 1913 models and to these he added three 1914 motors the following spring. In 1915 he added three more of the models of the built-in flywheel magneto type and cleaned up profits of \$400 in the season referred to by old residents as "the rainiest, coldest summer in their recollection." This year Mr. Harder proposes to replace all his battery models with Evinrudes equipped with the built-in flywheel type magneto.

### Announcement Covering 6 x 6-inch Van Blerck Motors

On several of the Van Blerck Motor Co.'s war orders it has had to supply engines with a 6-inch bore in order to obtain the maximum horsepower possible. To do this it was necessary to design a 6 x 6-inch cylinder that would fit on the regular

# MOTOR BOATING ADVERTISING INDEX

A		H		P	
Able Engine Co.	51	H. & N. Carburetor Co.	57	Palmer Bros.	76
Ackley Boat Bldg. Co.	74	Hall Co., W. S.	57	Paragon Gear Works.	98
Aerotherm Eng. Co.	74	Hand, Jr., Wm. H.	51	Peerless Marine Motor Co.	91
Albany Boat Co.	73	Hansen Nieter Safety Co.	59	Pioneer Boat & Pattern Co.	54
Anderson Engine Co.	51	Clifford B. Harmon Co.	66, 67	Powerlight	55
Arrow Motor Co.	56	Heinze Electric Co.	59	Prest-O-Lite Co.	82
Athol Mfg. Co.	87	Henricks Magneto & Elec. Co.	52	Pyrene Mfg. Co.	94
Automatic Machine Co., The.	80	Holopar Cooperage Co.	57		
B		I		R	
Balbridge Gear Company, The.	64	Hyde Boat & Eng. Co.	76	Racine Boat Co. (Racine)	72
Binney, Arthur.	51	Hyde Windlass Co.	73	Red Wing Motor Co.	61
Boston Varnish Co.	51	J		Regal Gasoline Engine Co.	54
Bowes & Mower	51	Ingram Hatch Motor Corp.	54	Richardson Boat Co.	60
Bridgeport Motor Co.	51	K		Roberts Motor Mfg. Co., The.	63
Brooks Mfg. Co.	80	Jacobson Machine Co.	57	Robertson Bros.	54
Bruna, Kimball & Co., Inc.	51	Jennings Co., H. H.	47	S	
Bryant & Berry Co.	93	Johns-Manville Co., H. W.	87	S. R. Mfg. Co.	55
Buffalo Gasoline Motor Co.	1	Jones, Frank Bowne	48	Sands & Sons Co., A. H.	85
Buffalo Specialty Co.	68	Jones, S. M. Co., The.	61	Sanford, Harry W.	51
Byrne, Kingston & Co.	78	L		Scripps Motor Co.	95
C		Kennebec Canoe Co.	52	Seaman, Stanley M.	43
Caille Perfection Motor Co.	4	Kennedy Machine Co.	58	Sears, Roebuck & Co.	85
Camden-Anchor Rockland Mach. Co.	52	Kenyon Co., R. L.	52	Sherman, E. M.	58
Campbell Co., A. S.	59	Kermath Mfg. Co.	100	Shaw Propeller Co.	63
Cape Cod Power Dory Co.	60	Keys Piston Ring Co.	70	Smalley-General Co.	58
Carleton Co.	54	"Knox Motors"	52	Smith & Co., Edward.	58
Carlisle & Finch Co.	51	Koban Mfg. Co.	86	Smith-Serrell Co., Inc.	58
Carlyle Johnston Machine Co., The.	60	Krice Carburetor Co.	52	Snow & Petrelli Mfg. Co.	69
Carpenter & Co., Geo. B.	64	Kroh Mfg. Co.	52	Solheim's Launch Works.	59
Carson Motor Co.	89	M		Splitdorf Electrical Co.	68
Chicago Examiner	54	Lawley, Geo., & Son, Corp.	57	Standard Co., The.	90
Classified Advertisements.	49-50	Leece-Neville Co., The.	60	Standard Motor Construction Co.	2nd Cover
Columbian Brass Foundry.	97	Liggett, A. G.	52	Standard Oil Co.	2
Cox & Stevens.	42, 51	Lipman Mfg. Co.	52	Standard Woven Fabric Co.	54
Crockett Co., The David B.	51	Lobee Pump & Mach. Co.	55	Stanley Co.	58
Cummins, C. L.	58	Lockwood-Ash Motor Co.	75	Stearns-McKay Co.	62, 71
Curtiss Aeroplane Co., The.	51	Loew-Victor Engine Co.	3	Sterling Engine Co.	3rd Cover
Curtiss Co., J. H.	52	Lord, Frederick K.	51	Stock, Walter A.	58
D		Luders Marine Construction Co.	61	Stohe Mfg. Co.	55
Davis Boat Works	51	Lunkenheimer Co.	70	Sturtevant Co., B. F.	58
Deering Boat Mfg. Co.	58	N		Sumter Electrical Co.	58
Defoe Boat and Motor Works.	56	McClellan, C. P.	60	Swasey, Raymond & Page.	51
Detroit Lubricator Co.	64	McFarlan & Spilker Mfg. Co.	55	T	
Detroit Standard Gear Co.	64	McQuay-Norris Mfg. Co.	83	Tams, Lemoine & Crane.	44
Doman Co., H. C.	57	Machek & Co., A. J.	52	Ten-in-One Strainer Co.	61
Domestic Engineering Co.	84a	Marine Compass Co.	52	Texas Co.	79
Draeger Oxygen Co.	65	Mason Machine Works.	52	Thermex Silencer Works.	52
Du Bois Mach. Shop, Inc.	51	Masten Co., G. H.	76	Thompson Bros. Boat Mfg. Co.	88
Durkee & Co., C. D.	76	Mathis Yacht Building Co.	77	Tiebout, W. & J.	71
E		Matthews Co.	83	Toppan Boat Mfg. Co.	59
Eastern Scientific Apparatus Co.	81	Michigan Wheel Co.	63	Tracy Still Mfg. Co.	54
Elco Co.	2nd Cover	Miller Gas & Vacuum Eng. Co.	63	Trimont Rotary Power Co.	49
Enhaus, Wm., & Son.	51	Missouri Engine Co.	52	Trinity Bell Elec. Mfg. Co.	56
Erd Motor Co.	96	Montgomery & Ward Co.	52, 56, 76	U	
Ericsson Mfg. Co.	84	Morristown Boat & Engine Works.	70	Universal Motor Boat Supply Co.	55
Evinrude Motor Co.	84	Morton Motor Co.	71	Universal Motor Co.	55
F		Motor Boat & Auto Supply Co.	60	Universal Safety Starter Co.	56
Fay & Bowen Engine Co.	99	Mott Iron Works, J. L.	72	Upson-Walton Co., The.	58
Ferdinand & Co., L. W.	76	Mullins Co., W. H.	77	V	
Ferro Machine & Foundry Co.	86	Murray & Tregurtha Co.	60	Valentine & Co.	41
Fort Hill Laboratory.	57	O		Valley Boat Co.	72
Frisbie Motor Co.	53	National Marine Lamp Co.	55	Van Blerck Motor Co.	4th Cover
G		Naval Architects & Yacht Brokers.	51	Vim Motor Co.	71
Gardner & Co., Wm.	46	Nelson Blower & Furnace Co.	59	Viper Co.	88
Gas Engine & Power Co., and Chas. L. Seabury Co., Consolidated.	6	Newfield, Silver Mfg. Co.	59	Vom Hofe Co., Edw.	56
General Elec. Co.	58	New York Yacht, Launch & Engine Co.	57	W	
Gielow & Orr.	45	Niagara Motor Boat Co.	79	Water Craft Co.	54
Gies Gear Co.	70	Nock, Frederick S.	51	Waterman Motor Co.	62
Goblet, Wm. H.	51	Norma Co. of America.	69	Watkins Motor Co., The.	56
Gordon Propeller Co.	58	Northwestern Motor Co.	52	Wilcox, Crittenden & Co., Inc.	59, 62
Gray-Hawley Mfg. Co.	52	P		Wilmarth, Morman Co.	56
Gray, Henry.	59	Oberdorfer Brass Co., O. I.	72	Willis Co., E. J.	69
Gray Motor Co.	84b	Ohio Top Co.	52	Winton Engine Works.	92
Great Lakes Boat Bldg. Corp.	78	Outing Publishing Co.	82	Wisconsin Machinery & Mfg. Co.	56
Gulf Refining Co.	62	Q		Wisconsin Motor Mfg. Co.	81





The Albany, owned by Mr. Bert Southall, making 30 miles an hour at Miami, Fla.



## The Champion Runabout of the South is Valsparred—

The "Albany," built by the Albany Boat Corporation, is rated one of the fastest runabouts in the South since she won the races for that class at Miami, Florida. This marvel of speed and beauty has Valspar wherever varnish is used.

Boats of this type see some hard service. And the presence of Valspar on such craft means that it comes through this hard service better than any other varnish. The owner of a speed boat expects to "tune up" his motor from day to day, but he doesn't expect to revarnish. This explains the presence of Valspar.

The letter on this page tells what a famous boat building company thinks of Valspar. The boats mentioned in this letter are nationally famous. And they were all finished with Valspar—the varnish that "stands the gaff," and won't turn white regardless of water, wind or usage.

You should have a copy of our valuable little booklet "Valspar for Boats." We will gladly send it upon request.

To be sure of getting a really good bottom paint, specify Valspar Bronze Bottom Paint. It is durable, handsome, anti-fouling and easy to put on.

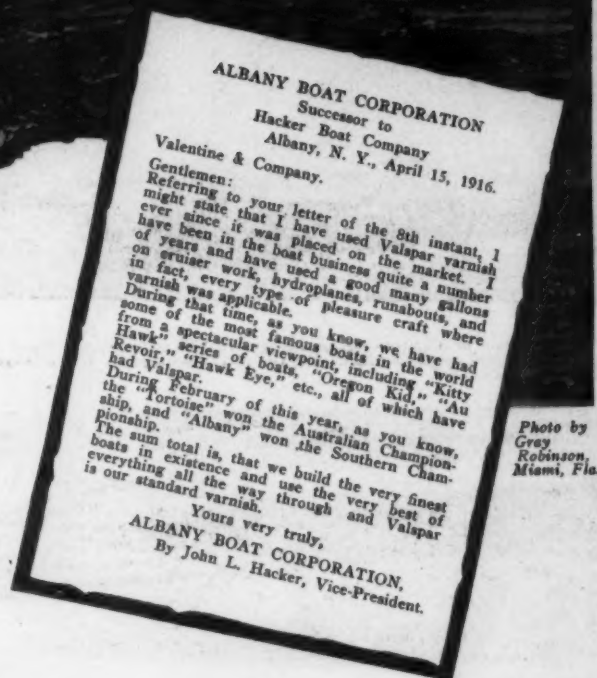


Photo by Gray Robinson, Miami, Fla.

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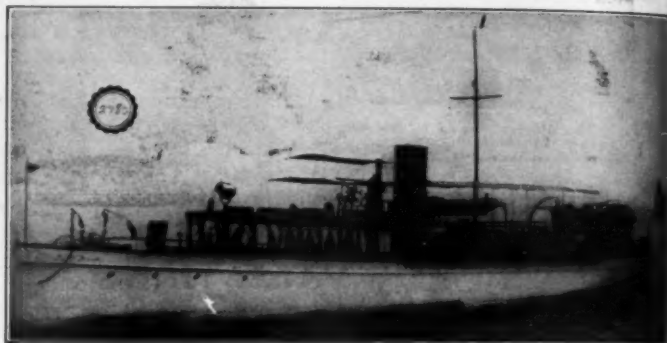
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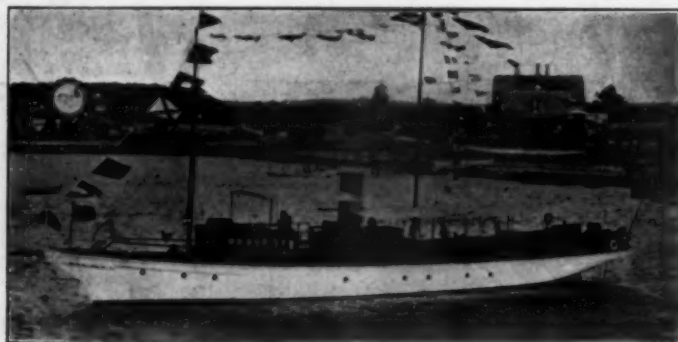
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request. Catalogue illustrating types and sizes of yachts we have for sale will be mailed on application.



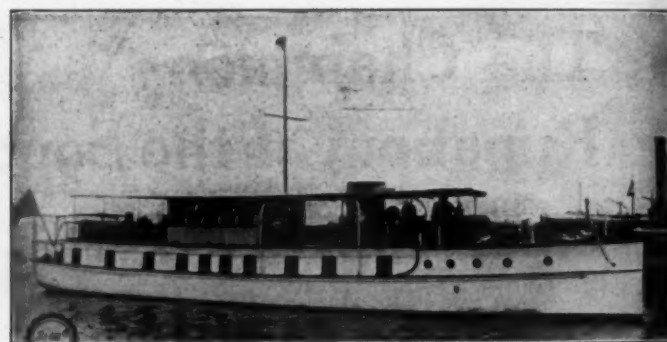
No. 84—For Sale or Charter—Handsome, fast 190 ft. steam yacht. Speed up to 18 knots. Splendid accommodations. For full particulars apply to Cox & Stevens, 15 William St., New York.



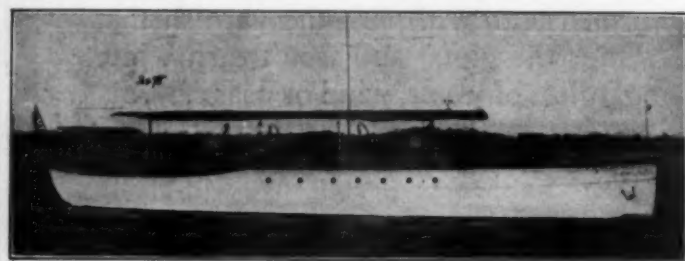
No. 2782—For Sale or Charter—Fast, twin screw power yacht; 99 x 14 x 4.6 ft. Speed up to 19 miles. Large dining saloon forward; three staterooms, bath, etc., aft. Adapted for ferry service or general cruising. Cox & Stevens, 15 William Street, New York.



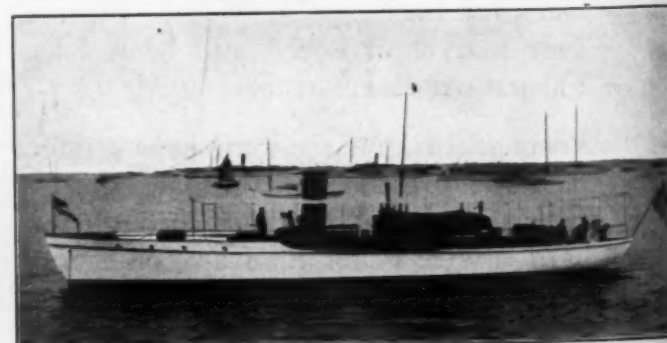
No. 573—For Sale—Twin screw power yacht, 90 x 14.6 x 3.2 ft. Speed 11 miles. Large accommodations include dining and main saloons, three staterooms, bath, two toilets, etc. Very economical to operate. Bargain for early disposal. Cox & Stevens, 15 William St., New York.



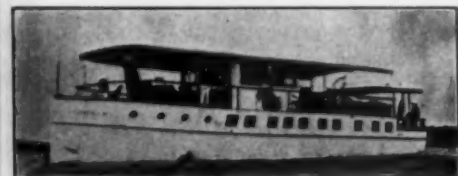
No. 2100—For Sale or Charter—Modern twin screw gasoline houseboat; 95 x 19 x 3.3 feet. Speed 13-14 miles; two 100 h.p. motors. Large social hall on deck. Dining saloon, four double staterooms, bath, etc. Very desirable craft. Cox & Stevens, 15 William St., New York.



No. 2478—For Charter or Sale—Exceptionally roomy, twin screw power yacht; 77 x 16.6 x 3.6 ft. Speed, 11 miles. Accommodations include two saloons, three staterooms, bath, two toilets, etc. All conveniences. Cox & Stevens, 15 William Street, New York.



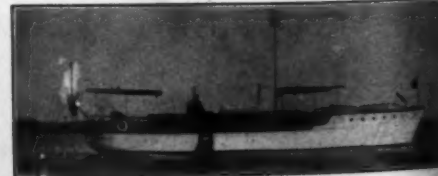
No. 2025—For Sale—83 ft. Lawley built power yacht. Speed up to 15 miles. Large saloon, two double staterooms, bath, two toilets, etc. In commission. Cox & Stevens, 15 William St., New York.



No. 3200—For Charter—65 ft. modern gasoline houseboat; speed 10 miles. Main saloon, five staterooms, bath and two toilets, besides saloon on deck. Terms attractive, Cox & Stevens, 15 William St., New York.



No. 1470—For Sale or Charter—Particularly desirable day cruiser; 67 x 10 x 3.7 ft. Speed up to 16 miles. Stateroom, separate galley, etc. Cockpit 18 ft. long. In commission. Bargain for prompt disposal. Cox & Stevens, 15 William St., New York.



No. 2053—For Sale or Charter—Bridge deck cruiser; 56 x 11 x 3.6 ft. 35/45 H.P. 20th Century motor. Speed 11 miles. Stateroom, saloon, galley, etc. Price reasonable. Cox & Stevens, 15 William St., New York.



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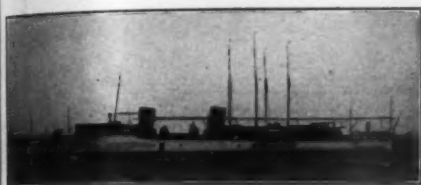
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Below are some of the finest yachts available for Sale and Charter. We have others of same type and will send full particulars immediately upon request.

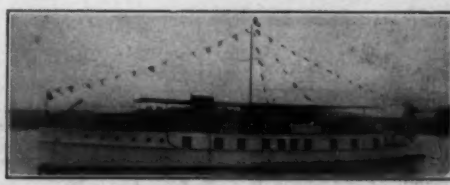
*We mail free to buyers the only Illustrated Yacht List of its kind published.*



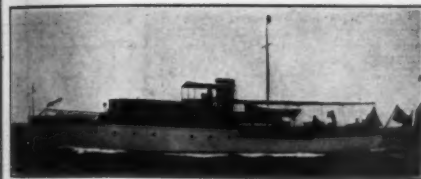
3394—125 ft. Twin Screw Steel Steam Cruiser. Speed 21 miles per hour. 3 staterooms and bath. Cost over \$70,000. Low price.



7996—For Charter—106-foot Seagoing Gasoline Cruiser. 4 staterooms and bath. Speed 15 miles.



7744—95-foot Twin Screw Ideal American Cruiser. 3 ft. 3 in. draught. 4 staterooms. 2 baths. Speed 14 miles. Hot water heat. Perfect condition.



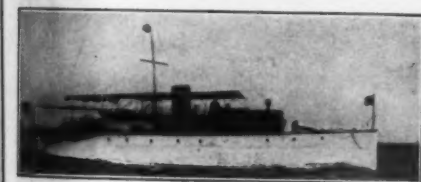
8241—83 foot Twin Screw Lawley Coast Cruiser. Modern appointments. Perfect condition.



8298—83-foot Lawley Seagoing Cruiser. Speed 13½ miles. Offered by Estate.



7978—For Charter. Twin Screw Ideal Seagoing Cruiser. 77½ ft. o.a., 17 ft. beam. 3 staterooms. Bath.



8103—71 foot Twin Screw Fast Coast Cruiser. 2 staterooms. Bath. Speed, 13 miles. Perfect condition. In commission.



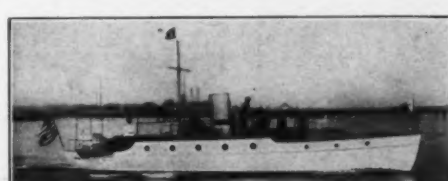
8063—The only 60-foot Cruiser of type for sale. 3 staterooms and bath. Practically new.



7618—The best 60-footer of type for sale—good as new. Speed 13 miles.



8230—59 foot Twin Screw Express Coast Cruiser. Launched 1915. Sterling engines. Speed, 30 miles per hour. Wonderful sea boat. Perfect condition. Only craft of character available.



8133—55-foot Cruiser. Double stateroom. Saloon. 2 toilets. Beautiful condition.



7913—56-foot Express Cruiser. Speed 20 miles. In commission.



8219—54 foot Elco-de-Luxe Express Cruiser. Elegant appointments. 60 H.P. self-starting Standard engine. Speed, 16 miles. Low price.



8250—52 foot Lawley Fast Cruiser. Fine accommodations. Speed, 13½ knots. Low price.



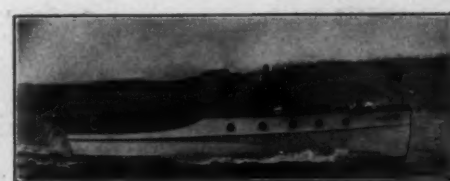
8313—45-foot Elco Cruiser. In commission.



8206—New 42-foot Cruiser. Every convenience. Electric self-starter. Speed 12 miles.



8205—40 foot Express Cruiser. New 1915. Speed, 25 miles per hour. Wonderful sea boat.



7903—40-foot Cruiser. Speed 12 miles. In commission.

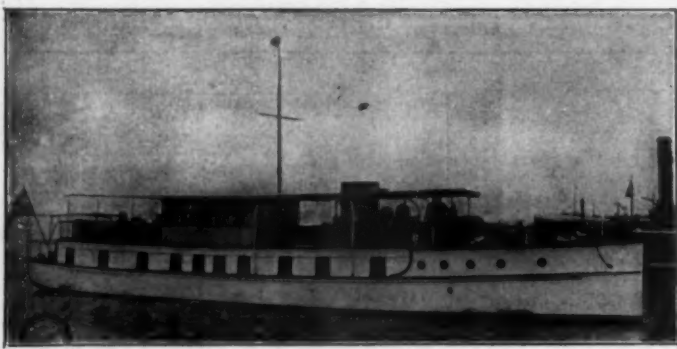
# TAMS, LEMOINE & CRANE

## NAVAL ARCHITECTS AND YACHT BROKERS

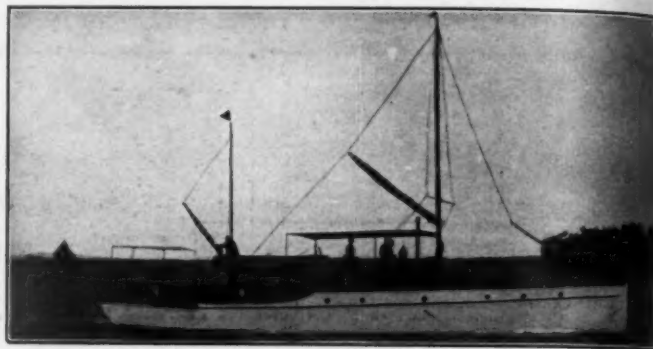
Telephone  
4510 John

52 Pine Street  
New York City

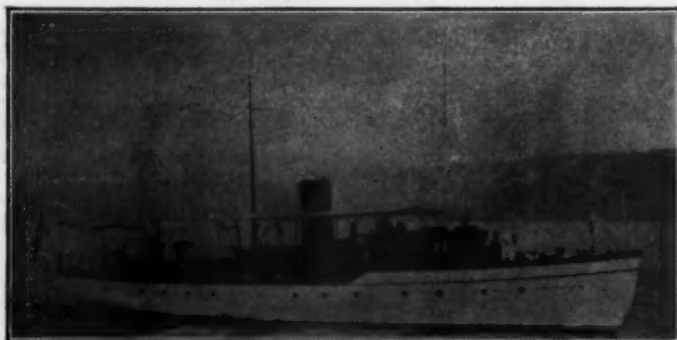
Offer for sale the following yachts, a number of which are available for charter



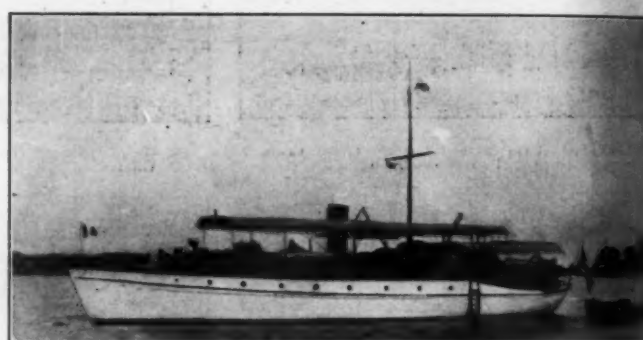
No. 1871.—Sale—Charter—Modern motor houseboat. 95 ft. x 19 ft. x 3.3 draft. 4 staterooms, dining saloon, social hall, etc.



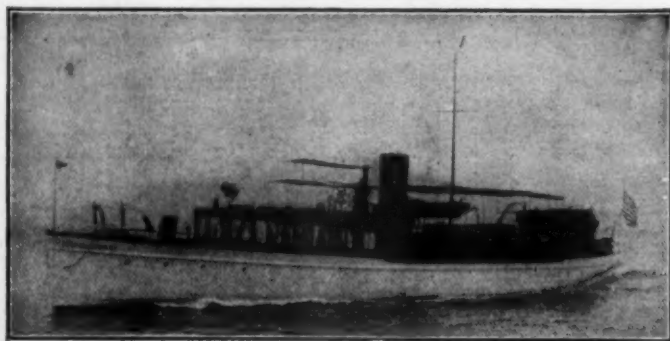
No. 8535.—Sale—Charter—Able seagoing motor cruiser, 64' x 12' 6" x 4' 9". 6-cylinder Loew-Victor, 60 H.P. motor; 2 staterooms, saloon, bathroom, etc.



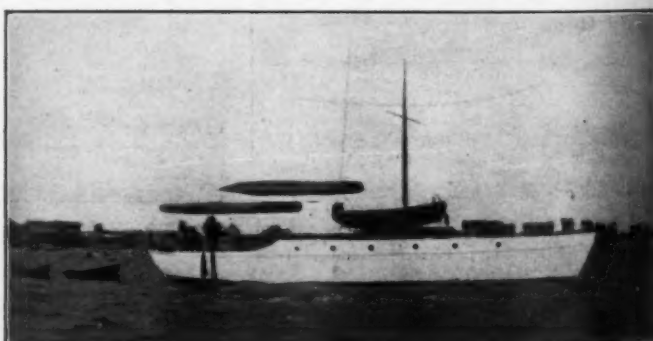
No. 8750.—Sale—Charter—Most desirable twin screw gasoline cruiser available. 84 ft. x 14 ft. x 4 ft. draft. Designed by us and built 1914. Excellent accommodations.



No. 7674.—Sale—Charter—Modern twin screw motor yacht 75' x 17' 6" x 3' 8" draft—20th Century motors. Speed, 12 miles. One double and one single stateroom and very large main saloon.



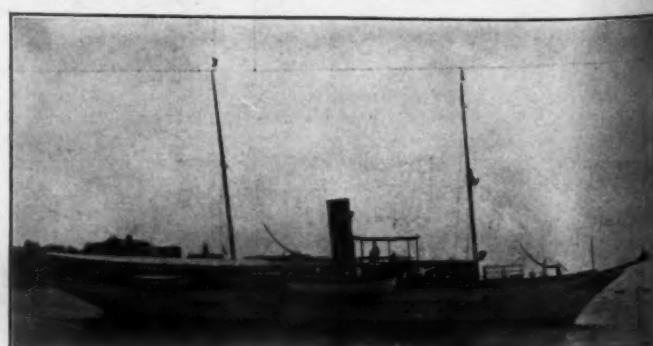
No. 7758.—Sale—Charter—Fast 99 ft. gasoline cruiser. Three owner's staterooms, large deck dining saloon and good after deck.



No. 7579.—Sale—Charter—Modern cruiser, 55' x 11' 6" x 3' 6" draft. Standard motor; speed, 11 1/4 miles. 2 staterooms, saloon, 2 W. Ca.; electric lighted, etc.



No. 7993.—Sale—Charter—In Commission—Best fast cruising motor yacht available. 105 ft. x 15 ft. x 5 ft. draft. Speed up to 18 knots. Excellent accommodations.



No. 7987.—Sale—Charter—In Commission—Attractive 106 ft. cruising motor yacht. 4 staterooms, dining saloon, etc.

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NAVAL ARCHITECTS  
ENGINEERS,  
BROKERS,  
MARINE INSURANCE.

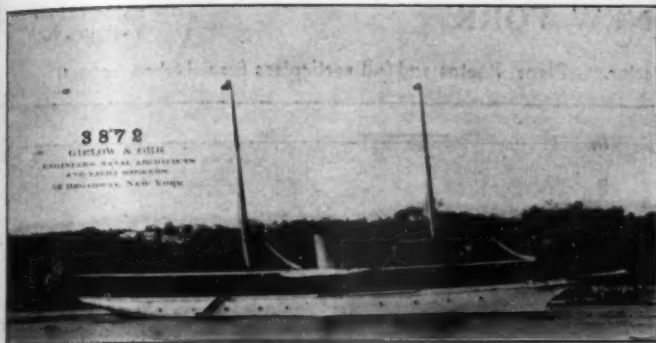
# GIELOW & ORR

52 Broadway, New York

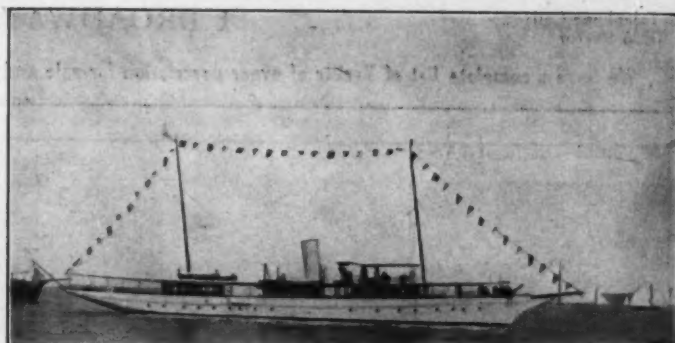
Telephone, 4673 Broad.

Cable Address:  
Crogie, New York  
A. B. C. Code

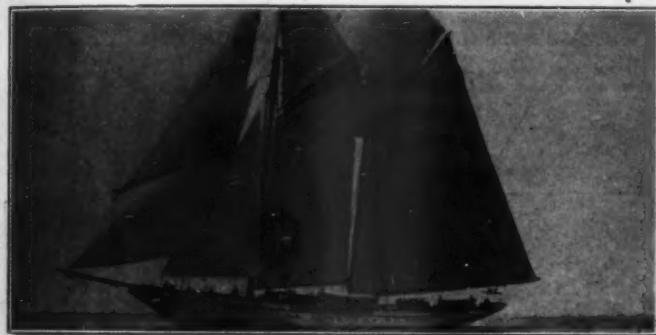
We can offer any yacht available for purchase or charter



No. 3872—For Sale—High class 130-foot flush deck Lawley steam yacht. One of the finest boats of size and style available. First class condition throughout. Excellent accommodations. Will be delivered in commission.



No. 1750—For Sale—Finest 160-foot twin screw steel steam yacht available. Speed up to 17 knots. 5 staterooms. 2 bathrooms. Deck dining saloon and social hall. A-1 condition throughout. To be delivered in commission.



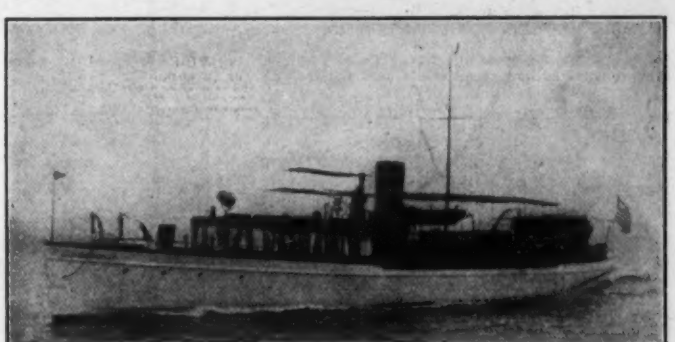
No. 434—For Sale or Charter—Auxiliary steam schooner, 162 feet x 120 feet x 28 feet x 16 feet draft. Unusually fine seaboat. Excellent accommodations. Has every convenience for offshore cruising.



No. 1038—For Sale or Charter for entire season—95-foot auxiliary keel schooner. New 6-cylinder motor. New electric lighting plant. New Ratsey sails. Newly furnished. New plumbing. One of the best boats of size and style available. Ready for June 15th delivery.



No. 5065—Sale or Charter—106-foot flush deck cruising motor yacht, 4 staterooms, large deck dining room, bath room, electric lights, etc.



No. 3659—For Sale or Charter—High class 100-foot twin screw motor yacht. 3 staterooms. Bathroom. Deck dining saloon. Large bridge and after deck. Speed up to 18 miles. Reasonable.



No. 3747—For Sale—High class 61-foot cruising motor boat. Construction, finish and equipment A-1 throughout. Must be seen to be appreciated.



No. 4266—For Sale or Charter—95-foot twin screw semi-houseboat. 4 double staterooms. Unusual accommodations. Excellent condition throughout. Subject to closest inspection. Fine seaboat.

WILLIAM GARDNER

FREDERICK M. HOYT

PHILIP LEVENTHAL

# WILLIAM GARDNER & CO.

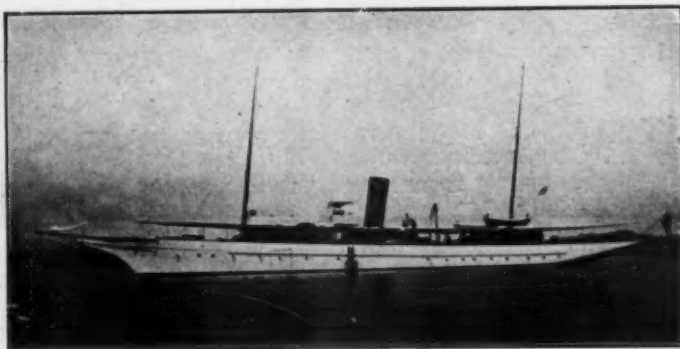
## NAVAL ARCHITECTS, MARINE ENGINEERS AND YACHT BROKERS

Telephone Call  
3585 Rector

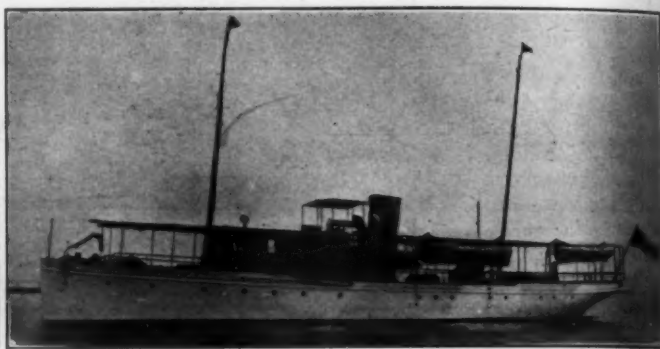
1 BROADWAY, NEW YORK

Cable Address  
Yachting, N. Y.

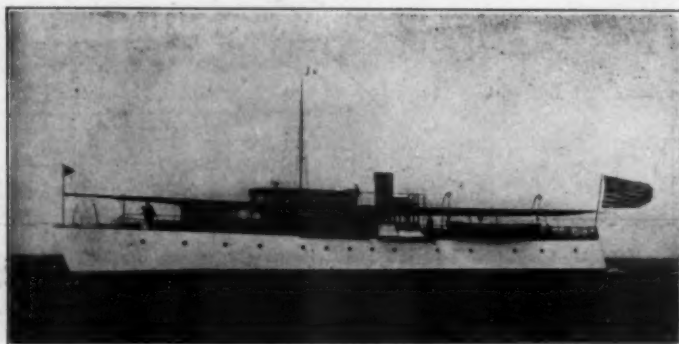
We have a complete list of Yachts of every description for sale and charter. Plans, Photos and full particulars furnished on request



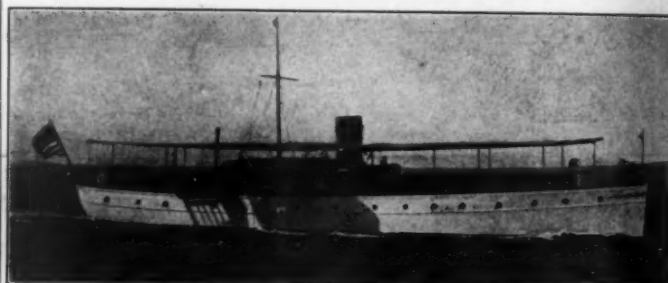
No. 181—Steel Steam Yacht, twin screw, 155 x 18, Seabury built; good accommodations, speed 16/18 miles. In commission.



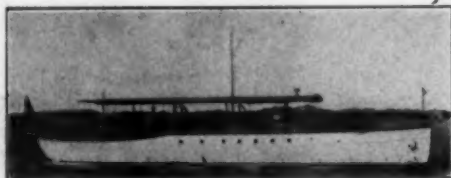
No. 1624—Gasoline yacht, 95 x 18, large six-cylinder Standard motor, good accommodation and speed.



No. 1238—For Sale—Cruising Motor Yacht, 125 x 20 x 6.3, speed 12 knots. Well constructed and exceptionally able and roomy.



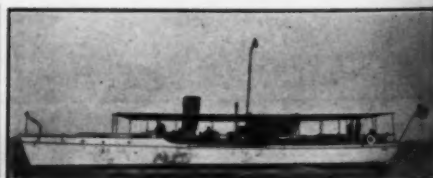
No. 1821—Fine Coastwise Cruiser, flush deck, twin screw, 90 x 15.3, two 6-cyl. Holmes motors.



No. 1893—Summer Charter—Twin screw power yacht, 74 x 17, two Twentieth Century motors, excellent accommodation.



No. 1850—Twin screw, Lawley built, 76 x 12.6, two staterooms, bath, etc. Speed 13 knots.



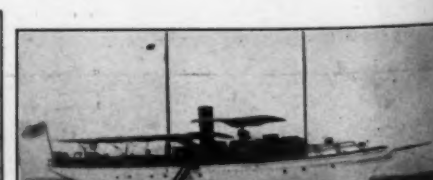
No. 1597—Offered by estate. Able cruiser, 83 x 12, six-cylinder Standard motor, speed 14 miles. First-class condition.



No. 920—Trunk Cabin cruiser, 65 x 12.6, six-cylinder Standard engine, speed thirteen miles. Has stack. Low price.



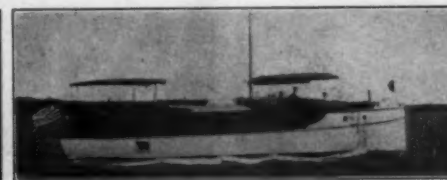
No. 1423—Raised deck cruiser, 55 x 12, Standard motor, with deck control.



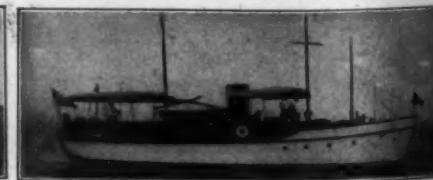
No. 1325—Attractive cruiser, 90 x 14.6, two Twentieth Century motors, four staterooms, bath, saloon, etc.



No. 1424—Bridge deck cruiser, Lawley built; 52 x 8.6; six-cylinder motor, speed 14 miles. Engine controls on deck.



No. 2140—Modern Cruiser, 43 x 10.6, built 1911, Standard motor, complete outfit.



No. 1869—Sale—Charter—Bridge deck cruiser, 56 x 12 x 3, 40 H.P. motor; attractive figure.

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HENRY H. JENNINGS

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# H. H. JENNINGS COMPANY

FORMERLY KNOWN AS

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HAMBURG-AMERICAN BUILDING

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Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you, write us your requirements. Our knowledge of the yachts we offer, and our 22 years' experience in the business, insure satisfaction to any one buying or chartering a yacht through this office.



No. 1636—Sale or Charter—50-foot Cruiser. State-room and saloon, sleep seven. Bathroom. Speed, 10 miles.



No. 1048—57-foot Lawley cruiser. Double stateroom and saloon with three berths. Standard motor. Electric lights. Speed 10-12 miles. Price reasonable.



No. 4141—95-foot auxiliary yawl. Three staterooms, large saloon, two baths. Sterling engine. Splendid proposition.



No. 971—Sale or Charter—37-foot cruiser, stateroom and cabin, sleep four, 20 H.P. Buffalo motor. Electric light, etc. Speed 9 miles.



No. 1729—Twin screw 85-foot power yacht. Two staterooms, large saloon, bath, etc. Two Murray & Tregurtha motors. Speed 13 miles.



No. 4029—55-foot auxiliary schooner. Two staterooms and saloon accommodate 8 people. Speed under power, 6 miles.



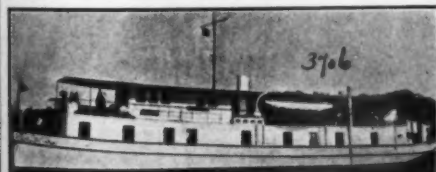
No. 2643—For Charter—190-ft. steam yacht. Nine staterooms, large saloons, baths, etc. Speed, 13 to 16 knots.



No. 1748—85-foot Twin Screw Power Cruiser. Three staterooms, main saloon, dining saloon, bath, etc. Speed, 14 miles.



No. 4157—68-foot Twin Screw Houseboat. Two staterooms, main saloon, dining saloon, shower bath, etc. Speed, 10 miles.



No. 3706—104-foot Twin Screw Houseboat. Five staterooms, large deck saloon, large dining saloon, bath, etc. Speed, 9 miles.



No. 3554—68-foot auxiliary keel yawl. Three staterooms, two berths in saloon, etc. Speed, 7 miles.



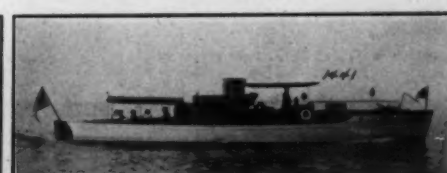
No. 1619—46-foot Bridge Deck Cruiser. Stateroom, saloon and engine room sleep six. Two toilets. 48 H.P. Speedway Motor. Speed, 12 miles.



No. 1672—48-foot cruiser. Engine room with two berths, large galley, main saloon two berths. Two toilets; large cockpit. Sterling Engine.



No. 1366—55-foot twin screw cruiser. Stateroom, saloon, two toilets, bath, etc. Two Sterling Motors. Speed, 12 miles.



No. 1441—60-foot Twin Screw Express Cruiser. Stateroom, saloon, etc. Two Sterlings; Engines installed 1915. Speed, 15 miles.



No. 1762—45-foot Elco Cruiser. Stateroom, saloon and engine room sleep 8 people. Two toilets. Standard Motor. Speed, 10 miles.



No. 1688—46-foot cruiser. Stateroom, saloon, etc. 35 H.P. Standard Motor. Speed, 10 miles.



No. 905—70-foot twin screw gasoline cruiser. Two staterooms, large saloon, with four berths. Two Buffalo Motors. Speed, 13 miles.

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# FRANK BOWNE JONES, Yacht Agent

Cable Address "Windward," N. Y. 29 Broadway, New York

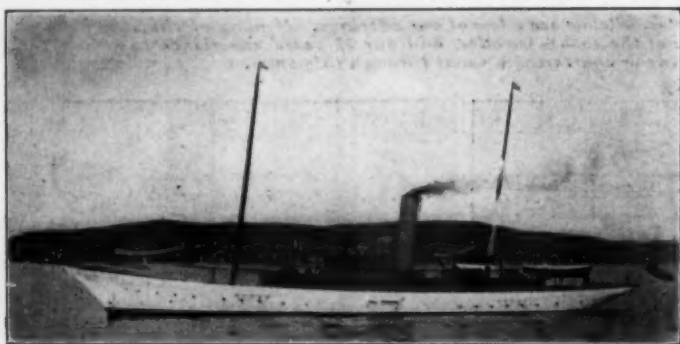
Telephone, Rector 3890

High-Class Yachts of all types for sale and charter

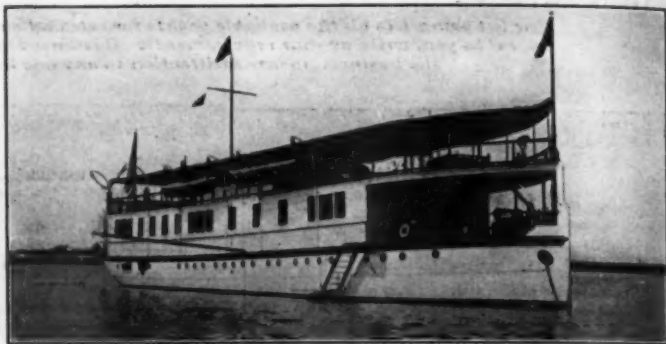
NAVAL ARCHITECTURE

Description, Prices on Request

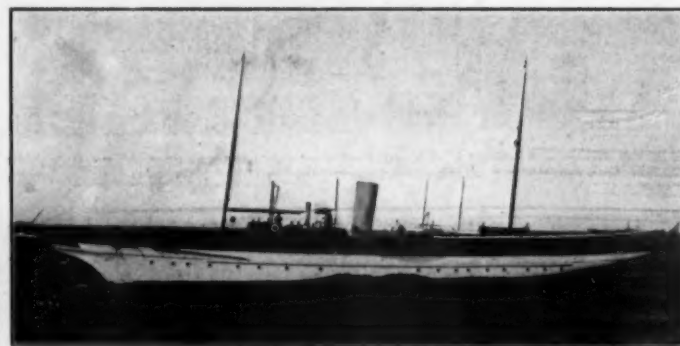
MARINE INSURANCE



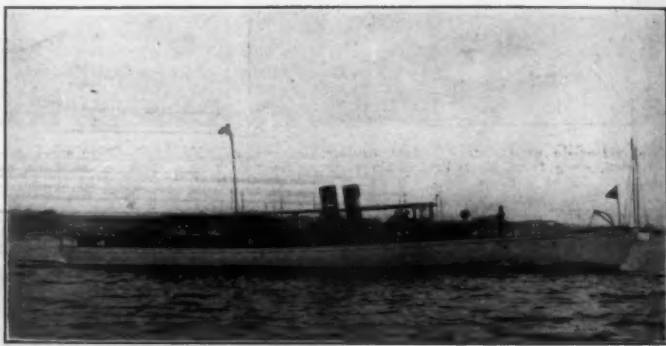
No. 3904—Sale or Charter—200-ft. Sea Going Steam Yacht; American Registry; immediate delivery in commission.



No. 3039—Sale or Charter—125 ft. Power House Yacht; very handsomely finished and furnished; best of type available; delivered in commission.



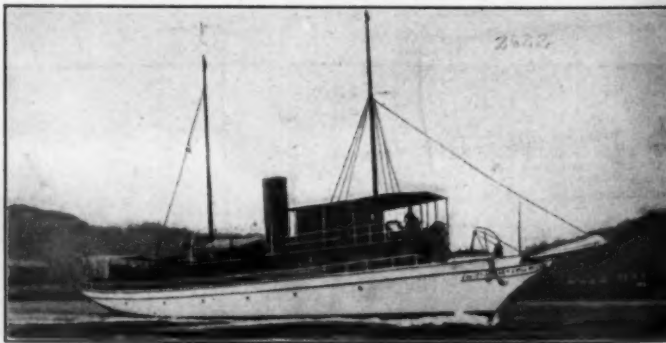
No. 3480—Sale—150-ft. Steel Steam Yacht; high speed; good accommodations; in commission.



No. 2210—Sale or Charter—110-ft. Express Steam Yacht; twin screw; 27 miles speed; delivered in commission.



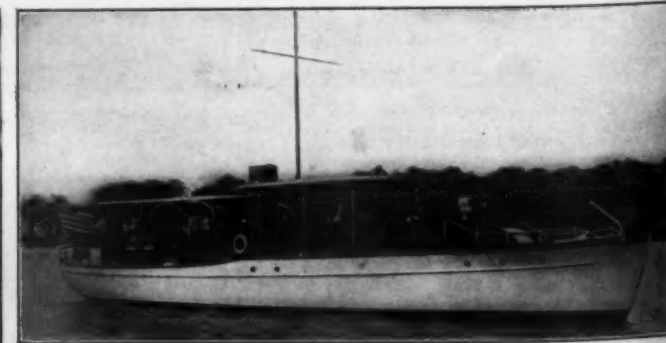
No. 3945—Sale—95-ft. twin screw gasoline express yacht; steel hull; attractive price.



No. 2622—Sale—110-ft. Twin Screw Gasoline Yacht; exceptional accommodations; most desirable boat of the type.



No. 6557—Sale—60-ft. Gasoline Cruiser; auxiliary rig; very best design and construction; condition good as new.



No. 7038—Sale or Charter—75-ft. Gasoline Cruiser; good speed; best build; 6-cyl-inder motor; delivered in commission.

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## Opportunities for the Motor Boatman

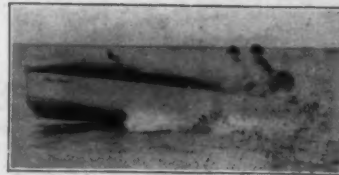
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



36 ft. x 8 ft. Cabin Cruiser just refinished.

### SPECIAL PRICES

15 H.P. Heavy Duty Engine, will sacrifice at \$800.00. Complete outfit \$750. Full particulars on the above on request.



16 ft. 40-50 H.P. Speed app. 32 M.P.R.

### MARINE RUNNING LIGHTS:

Polished Brass Combination Lights.....	\$3.25
Galvanized Brass Combination Lights.....	2.50
Galvanized Stern Lights .....	.70
Brass Stern Lights .....	1.30

### CLASS 3 LAMPS:

Polished Brass, Fresnal Glass, set of three.....	\$8.50
Polished Brass, Fresnal Glass, set of three.....	6.75
Prices on Stern Lights, and Class 2 on request.	
Dry Powder Fire Extinguishers, special.....	.50
15 in. Auto Rim Steering Wheel and Spider.....	1.00

The above prices give you a general idea of what we can furnish various articles for in the Marine Line.

We are in a position to furnish anything that is called for, promptly at exceptional low prices.

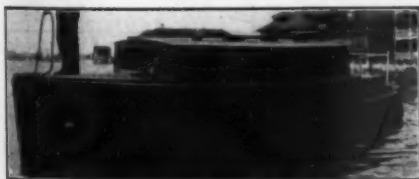
We have a number of shop worn Grade B Detachable Folding Seats which we are closing out for \$1.50; rather than spend any time refinishing.

Our new 1916 catalog is now ready for delivery and will be sent on receipt of 5c in stamps to cover mailing charges.

Write today.

MOTOR BOAT SUPPLY CO.,

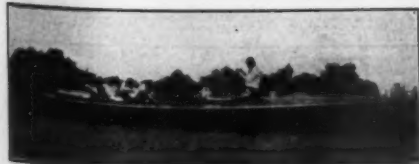
1415 WEST 9th STREET, CLEVELAND, OHIO



FOR SALE—Fast Express Cruiser, 32 x 7 ft. 6 in., 4-cyl. 4-cylinder Loew-Victor, 24-40, 14 miles or better. Toilet, two transom berths. Best offer. William W. Moore, 1011 Chestnut St., Philadelphia, Pa.



"Handsome Day Cruiser," 40 ft. x 8 ft. Has seen practically no service. 40 h.p. engine. Bargain for quick sale. Niagara Motor Boat Company, 95 Tremont St., N. Tonawanda, N. Y.



FOR SALE—Having a larger boat, will sell my 40-ft. x 6-ft. mahogany built 24-mile Fairbanks II in perfect running order, at a bargain. Address, Edward W. Baker, 1410 McCulloch St., Baltimore, Md.

CANADIAN. Second-hand engine bargains. Send for list. GUARANTEE MOTOR COMPANY, Hamilton, Ont., Canada.

FOR SALE—The "Dippa-De" length 28 feet; beam 5 feet; displacement model equipped with a six-cylinder "48" Packard Motor and "Joe" special reverse gear. Holder of the record trophy; speed 25 miles; put in commission in May 1915. Perfect condition, complete in every detail, motor guaranteed by me. Edwin B. Jackson, 1861 Broadway, New York City.



No. 917—For Sale or Charter—Twin-screw bridge deck cruiser; 46 x 10 x 3.6 ft. draught. Designed and built by the Bath Marine Construction Co. in 1910. Two 15/20 H.P. motors, new 1912; speed, 10 miles. Accommodations include stateroom, and saloon sleeping 6 people comfortably, toilet room and galley. Also room for man forward. Interior finish mahogany and white enamel. Complete equipment. Electric lights. Has had best of care and is in excellent condition. Very able craft for her size, having cruised to Bermuda and back. Immediate sale desired by owner. Located in New York. Further particulars from Cox & Stevens, 15 William St., New York.



FOR SALE or exchange for an auxiliary, 31.8 x 8.4 ft. 2.10. Complete cruising equipment for 4 people, 13 1/2 H.P. Knox engine with reverse gear, and full bridge control. Cruising speed 8 miles. W. G. Allen, 27 Morning Street, Portland, Maine.

### Trimount Whistle Blower Outfits

Blower runs by friction contact with engine flywheel. Whistle of brass, nickel-plated.

3 sizes, \$10, \$15, \$20.

### Trimount Rotary Hand Edge Pumps

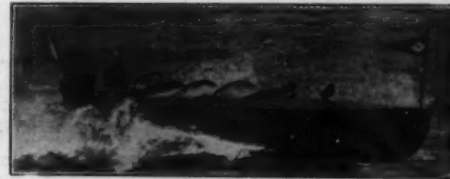
All bronze composition. Suction lift 6 to 20 feet. A lifelong convenience.

3 sizes, \$20, \$25, \$35.

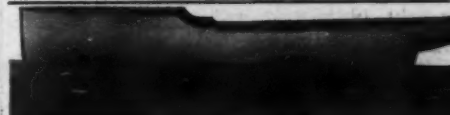
### TRIMOUNT ROTARY POWER CO.

20 Heath Street, Boston, Mass. (Factory: Whiting Ave., East Dedham, Mass.)

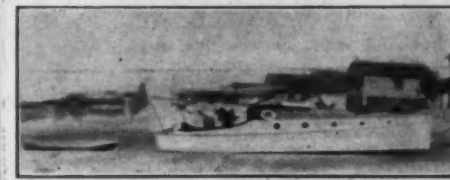
FOR SALE—Elco Express, 35-foot, 60 horsepower; four-cylinder, four-cycle; excellent condition, all mahogany; full equipment. H. Nelson, 238 44th St., Brooklyn, N. Y.



\$47.50 for a limited time, we will sell these seventeen-foot stepless hydroplanes at the above price for complete knock-down boat, which includes mahogany interior and every piece of material necessary to complete the hull. Other models at proportionate prices. Write for circulars. HYDROPLANE CONSTRUCTION COMPANY, Point Pleasant, Kentucky.



FOR SALE—Cheap. New cruiser hull, like above cut, 60 ft. long, 12 ft. beam, 3 ft. draft, all copper fastenings. Address Wm. S. Kirk, Jr., 1627 North 10th St., Philadelphia, Pa.



Will sacrifice to settle estate. Sunrise, finest raised-deck cruiser of her type and only two years old; 30 ft. 6 in. x 8 ft. 6 in., equipped with 2-cylinder 14 H.P. Harris engine with double ignition; has magneto, dynamo and complete electric lighting outfit, including running lights, stationary washstand, pantry and toilet; finish genuine mahogany; also lifeboat. Speed 11 1/2 miles per hour. Designed by Bowes & Mower. First check price, \$1400. For further information write Charles Lavender, Jr., 1522 Ritten St., Philadelphia, Pa.

WANTED—First class carpenters, boat builders, joiners, plumbers, and pipe fitters; also machine and lathe operators. Matthews Boat Co., Port Clinton, Ohio.

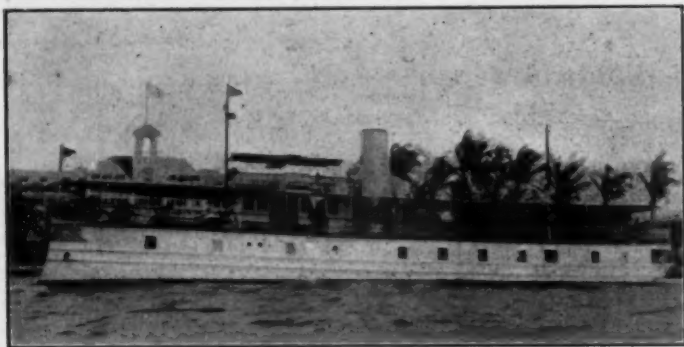
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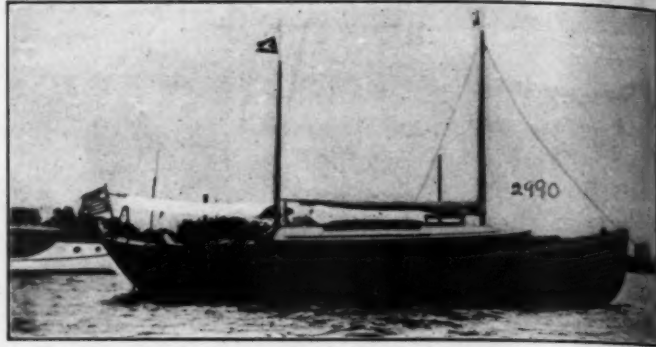
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Cut one inch deep, one column wide..... \$2  
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Cut three inches deep, three columns wide..... \$15

Opportunities  
for the  
Motor Boatman

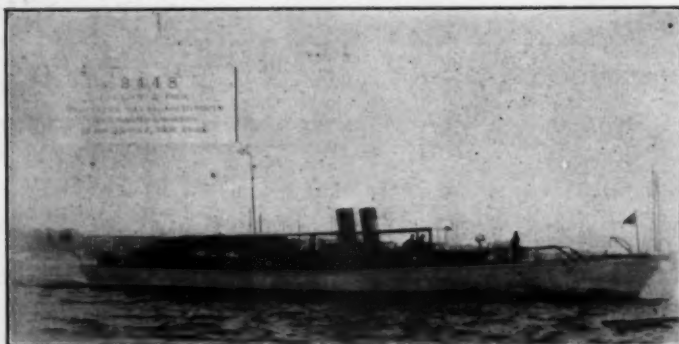
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



No. 1234—For Sale or Charter—Twin screw steam houseboat. 116 x 21 x 4 ft. 6 in. Speed 10 knots. 5 staterooms. Main saloon 14 x 16. 4 bathrooms. Music room in deckhouse. One of the finest appointed boats available. Economical to operate. Very completely found. Gielow & Orr, 52 Broadway, New York City.



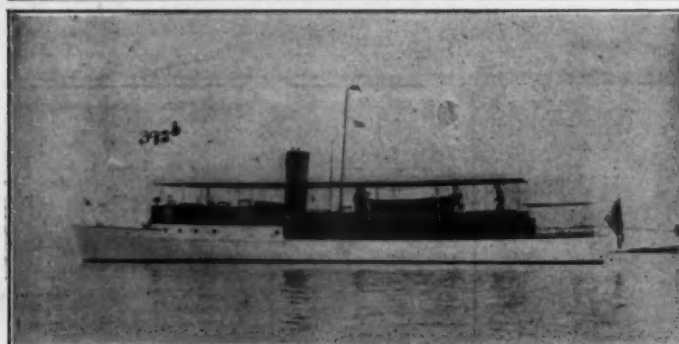
No. 2990—For Sale—Very able and desirable cruiser (Seabright ship), 41 x 10.8 x 2 ft. 6 in. craft. Built 1914. 30-50 H. P. Sterling motor; speed, 9 1/2 miles. Sleep four comfortably. Excellent condition. Complete equipment. Price reasonable. Cox & Stevens, 15 William Street, New York.



No. 3448—For Sale at low price or will Charter for the season—111-foot twin screw express steam yacht, speed up to 20 knots. Good accommodations for a boat of this type. Gielow & Orr, 52 Broadway, New York City.



OCEAN CRUISER—50' x 12' x 3' 6". Excellent condition. 50-hp. Peerless Marine Motor, 1915, perfect condition. Power and row tenders. Electric lighting. Stateroom, large galley, toilet, separate lavatory, saloon, sleeps 5-10. Located at Liders Marine Construction Company, Stamford, Conn. Price \$1,950, or the same cruiser and new equipment with Hall 20-hp. instead of Peerless motor, \$1,350. A. S. Pattison, 613 F Street, N. W., Washington, D. C.



FOR SALE—Mahogany runabout double planked, seating six. 25 ft. x 4 ft. 6 in. x 18 in. 12 H.P. Kermath, 4-cylinder, 4-cycle, double ignition. Excellent condition; beautiful lines; 12 M.P.H. Sell for \$375. Fred W. Gordon, 61 Broadway, New York City.

FOR SALE—Standing top Seabury Launch, 30 x 6 ft. 6 in. x 2 ft. 8 in., 12 H.P. 2 cylinder Ferro; speed about 12 miles per hour; new cushions. Full equipment; excellent condition. Price \$375. Fred W. Gordon, 61 Broadway, New York City.

FOR SALE—24-30 H.P. 4-cylinder Mercury engine; also complete electric starter system. Will sell whole outfit for \$250. Geo. W. Washburn, Catskill, N. Y.

RUNABOUT—Auto control, copper riveted, mahogany deck; speed, fifteen miles. Sacrifice for half cost. Otto S. Jung, 115 Broadway, N. Y. Rector 3058.

AUTOMOBILE WANTED—Will exchange new motor boat hull built to order—first class—for used automobile—Buick, Chevrolet, or good runabout. Photo. Box 359, Syracuse, N. Y.

FOR SALE—One model R-1, 4-cylinder, 64 x 9, 300 H. P. Sterling motor with electric starter and complete equipment. In perfect condition. Reason for selling, owner is installing larger engines. This is one of the three motors removed from the express cruiser MAROLD. Two have already been sold. An exceptional opportunity to secure a better than new motor at a very reasonable cost. Address: Owner's representative, Capt. Ivan C. Lundblom, care of The Matthews Company, Port Clinton, Ohio.

FOR SALE AND TO LET—Motor and sail boats suitable for the Great South Bay. Telephone Connection. Frank Weeks, Patchogue, L. I.

SPEED BOAT FANS ATTENTION!  
Pierce-Budd engine, 4-cylinder, 30-40 H.P. Bosch magnet, completely equipped, weighs 283 lbs. Guaranteed condition. A quick sale. Harry Godley, 510 Brady St., Davenport, Iowa.

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FOR SALE OR EXCHANGE—A new Hand V, fast, 30 ft., raised deck cruiser of the best material and construction, electric starter and lighting system, E-4 Van Blerck motor, for a fast runabout as part payment, or sell at cost. Boat brand-new and ready to be launched June first. Address Fast Cruiser, Motor Boating.



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FOR SALE—Packard 12-48 Motor, removed from the "Dippa De" holder of record trophy. This motor has been equipped for boat purposes, with a gear driven pump and a "Joe" special high speed reverse gear and is in A-1 condition. Edwin H. Jackson, 1861 Broadway, N. Y. C.

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## Aquaplaning—A Novel Sport

(Continued from page 11)

behind the motor boat soon grows monotonous, but these light planes can be steered out clear of the wake of the "tug," and then if the water is the least bit rough the rider will have some interesting moments. Steering is done by shifting the weight from one foot to the other, and if this be done suddenly when at good speed the plane will swing out through the wake of the tug in a long, curving sweep, ending with a vicious snap, not unlike that of a whip. The man running the boat can have some good fun, too, if he has an experienced rider up, and tries to shake him off. It can often be done by sudden changes of speed and erratic steering, but when this fails there still remains the expedient of running at full speed, pulling in ten feet of tow line, and then suddenly letting this slack go. The rider who can stick through this performance, even though he lie on the plane and hang on for dear life, must be mighty strong in the arms and have a wonderful grip as well. The more difficult stunts like standing on one's head and the double decker, one man on another's shoulders, are a matter of balance and practice.

## Where Shall We Cruise This Summer?

(Continued from page 10)

Point are two buoys to be rounded before standing into the harbor which is at its best in mid-August when the Corinthian Club gives a racing festival for anything floating that is enrolled in a recognized yacht club. Then there may be present a thousand boats, from steamer to skipjack, and space for a mudhook is at a premium. Wise skippers, at such times, anchor toward the head of the harbor, using care not to get into eel grass. A northeaster kicks up a nasty chop at Marblehead and boats anchored in close proximity to each other may be damaged by dragging or fouling. An anchorage about on a line with the airship factory is as good as any.

At Marblehead are several landings, a playground, supplies and a ferry. The railroad station is reached by street cars and gasoline is pretty sure to be as cheap as anywhere. On the town side of the harbor is the Boston Yacht Club, while the Corinthian and Eastern Yacht Clubs are over on the Neck and their floats bear the sign, "For Members Only." Salem Willows, popular with up-country people and yachtsmen, is a short run from Marblehead, and Beverly, home of enthusiastic motor boatmen, is just beyond. Salem will be recalled for its early trade with the East Indies, its little Cleopatra's Barge which, as a yacht, opened the eyes of Europe when Ben Crowninshield went foreign in pomp and splendor. Also, here lived Bowditch, whose work on navigation stands undimmed by time, and in this rock-girt bay privateers were fitted out and returned with costly prizes when the last century was new.

Manchester Harbor, near Beverly, is worth a visit, and navigation of the dredged channel is simplified by buoys that appear odd when the tide goes out and leaves an expanse of mouse-colored mud. One may anchor in the basin near the railroad station or go under the bridge if the boat is shy on topwater. The town is the home of multi-millionaires whose estates come down to the beach from wooded uplands. From Manchester the cruise toward Gloucester takes one between Baker Island and House Island, with Whale-back Ledge as the danger to be avoided. Dog Bar Breakwater at the entrance to Gloucester Harbor is but five miles from Baker Island with no crooks to the course. Perchance you will decide to discover Gloucester by the Halfway Rock route, a trifle longer but possessing the advantage of deep water.

Proceeding to the eastward by way of Thatcher's Island is all right if the destination is to be reached with infrequent stops. Most yachtsmen, however, favor the route via Annisquam River on account of the stretch of smooth water and the picturesque quality of the setting of blue sea, sand dunes and verdure. The river is entered from Gloucester Harbor at the Cut Bridge with snubbing posts conveniently located if one has to wait for the draw tender or for a turn of tide. The river is buoyed and has an assortment of dolphins and stakes so that there is no danger of running out of the channel providing ordinary caution is exercised. The tide rises about nine feet, and the aspect of Annisquam River, as may be inferred, constantly changes from the condition of brimful to drained out. Lobster Cove, near Annisquam Light, is an ideal anchorage. The local yacht club zealously fosters small boat racing and enrolls a lot of sportsmen.

## Choosing the Proper Power Plant

(Continued from page 23)

case. This will give all the advantages of the valve-in-the-head type with its small cooling surface and concentrated explosion chamber, and at the same time, this position and arrangement of valves and operating mechanism will permit of easy grinding in of the valves by removing a valve cap on the opposite side of the motor with the valves in place. Another advantage of this valve arrangement will be in the position of the manifolds. They can now be placed on top of the cylinders, saving about fifty per cent. of the space that would be occupied in the athwartship by a T-head motor with the manifolds on each side. With the exhaust manifold arranged this way we can take our exhaust directly from the top of the manifold to the funnel or out either side as may be desired, permitting a much simpler exhaust pipe line. The valve ends will be so arranged that by screwing back the adjustable thrust it will be possible to run the motor with one or more cylinders out of operation. This is a rather important point, as it would permit of running the motor so as to make port with badly damaged moving parts in a cylinder without any serious damage to the motor, or a chance of an engine-room explosion, which would be the case if the motor was run with the valve caps removed and the valves in operation.

The pistons will be of an aluminum alloy and will be so designed that the thrust is carried down the sides and to the rod by a series of webs. While aluminum has a low melting point, it has the property of carrying off heat very quickly to the cylinder walls so that there is thought to be not the slightest chance of damage from this cause. By using pistons of this type, it is possible to increase the power and decrease the noise and vibrations, as the

(Continued on page 52)

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The Wonder of 1916. A high class four cycle engine, simpler and lighter than any other ever built.  
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With Reverse Gear, \$185; Weight, 150 Lbs.  
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Including Splitdorf Dixie Magneto, Carburetor and Spark Plug.  
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Waterproof SPAR FINISH  
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Removable Base  
This clock has a polished brass case, 8-Day Jeweled Movement. The mahogany base can be removed when clock is hung in yacht cabin. Clock with base makes a fine mantel clock. Send for Catalog 8.  
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The most sanitary and silent working fixture ever produced. Send for catalogue.  
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We make searchlights in sizes from 7 in. to 60 in. diameter, suitable for small launches and yachts and for the largest battleships. Send for Catalog A.  
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2½ to 48 H.P.  
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First thing the yachtsman thinks of when he needs a tender is a "Davis Dink." Light, strong and serviceable. Both row and power in stock. Sizes 8 ft. to 16 ft. Our 8 ft. row weighs 65 lbs.  
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No Back Pressure!



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(Continued from page 51)

connecting rods can then be made lighter. Then the weight of reciprocating parts to be stopped and started every revolution will be very light and accordingly the wear and tear on the motor and the vibration will be small.

The auxiliaries will be all located outside and the main auxiliaries, such as generator, magneto, circulating pump, timer and gasoline pump, will all be driven from a vertical drive shaft at the after end of the motor, where they can be easily gotten at without tearing down the motor. The bilge pump and air pump will be fitted with clutches so that they can be thrown out of operation when not needed. The oil pumps are located in the crankcase, so that they will be always primed by the splash system that is used in conjunction with the force feed system. These pumps are built in cages so that they can be easily removed through the upper part of the crankcase by taking out four cap screws. Should it become necessary, these pumps can be removed in a very few minutes at sea for renewals or adjustments, and the motors run in the meantime at a fair speed on the splash system.

### Express Cruisers for Our Country's Defense

(Continued from page 13)

the lights, buoys, and so forth, but will give handsomeness and latent nautical talent their first instruction in matters pertaining to the water. It is apparent also that this campaign would stimulate the study of the great basic subjects of chemistry and physics, mathematics and astronomy in the water man.

It is proposed, of course, that class room instruction in all of these subjects be carried on during the winter months, in lecture rooms or clubhouses, laying the foundation thereby of miniature or mosquito naval academies. The George Washington University has consented to loan its lecture rooms for instruction work, and several of the instructors and professors have already volunteered their services.

The splendid educational work in purely nautical matters which has been carried on for several years by the United States Power Squadrons would be stimulated and supplemented with military matters, and it is proposed that membership in the Volunteer Torpedo Patrol be taken from the following classes of men: First, members of the United States Power Squadrons; second, yachtsmen of proven experience and ability; third, graduates of engineering schools or colleges; and fourth, certain men of recognized standing who may be especially valuable by virtue of equivalent experiences. Accepted members will pay an annual sum to defray the cost of materials used and other expenses. As training and experimental work in the use of electricity and high explosives, practice cruising and signaling are rather expensive, it is proposed to enlist also "sustaining members" who may, because of patriotism and interest in national defense, be willing to contribute toward the welfare and work of the Patrol, and in addition there will be the important class of "instructing members," the members of the faculties of the engineering schools and colleges who may offer their talents and time to giving instruction.

In conferences with the secretary of the Navy, the Assistant Secretary of the Navy, as well as with naval officers of various ranks and eminent civilians, the writer encountered a very friendly atmosphere and met with gratifying encouragement when this plan was presented.

It may be of interest to repeat at this time the familiar saying that "A little knowledge is a dangerous thing," and to emphasize with two or three cases that there is room for the sort of instruction outlined above. For this purpose let us take two concrete examples by way of illustration.

First, relative to mounting rapid-fire guns on yachts it should be appreciated by the yachtsmen and yacht builders that a three-pounder rapid-fire gun (which, according to the naval officers with whom the writer has conferred, is the smallest to be of much military value against a submarine) weighs with its mount in the neighborhood of 1,500 pounds. In addition we have to deal with its trunnion pressure of about 9,000 pounds, suddenly exerted at the time of discharge. Unless this trunnion pressure is understood and properly taken care of, it would, with the first shot, tear up the decks and loosen the seams and planking of most yachts and other light vessels. A study of ballistics and the theory and practice of long-recoil and anti-recoil guns will give us much valuable information at this time.

For the second example let us plan to lay a submarine mine to defend the entrance of a river or harbor. Suppose through default of congressional action that there should be a lack of service mines as there is to-day in ammunition and torpedoes. We would be called upon in that case to improvise with commercial supplies, and in the absence of a standard mosquito manual of instruction we would have to design and assemble submarine mines. The chances are that we would meet with failure and only learn by costly experience, as the successful working of submarine mines requires important knowledge of physics. A metal container for a mine, unless scientifically constructed, would collapse at certain depths of water, and a stout wooden barrel or cask, even if it withstood collapse, would have the sea water actually forced through the pores of the wood at a depth of five or six fathoms, rendering the mine inoperative. These two concrete examples where only a little knowledge may prove costly are merely taken at random and are given to show the fascinating arts and sciences involved in the making of an efficient torpedo patrolman.

Many yachtsmen believe that they understand in a general way the theory and practice of wireless telegraphy, but how many of them without systematic practical instruction, such as it is proposed to inaugurate, could set up and operate a sending and a receiving station? Many graduates from engineering schools and colleges believe that they might be of use upon the water in time of war, but what services could they render either by night or by day upon the water in a heavy sea, if through lack of prior experience, they found themselves too seasick to know or care whether their country was at peace or at war?

During the summer of 1898 we practiced with spar torpedo and swift launch along the lines of Cushing's work when he torpedoed the Albemarle, of the Confederate States Navy, and we felt the need, as every organized patrol squadron will, of a diver's outfit and of practice in its use.

(Continued on page 54)

### NORTHWESTERN TWO-CYCLE MOTORS

18 H. P. with Complete Electrical Equipment \$250  
Row Boat Motor, \$50. 10 H.P., \$150. 2 H.P., \$50. 4 H.P., \$75. 7 H.P., \$100.  
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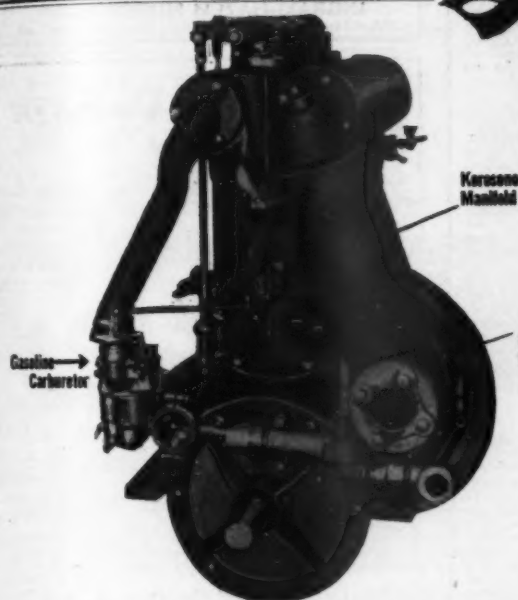
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# KEROSENE—

The New Efficiency Fuel for the

**Frisbie**  
VALVE-IN-HEAD  
MOTOR



End View of Frisbie Kerosene Motor (without reverse gear), showing the separate manifolds and carburetors on opposite sides.

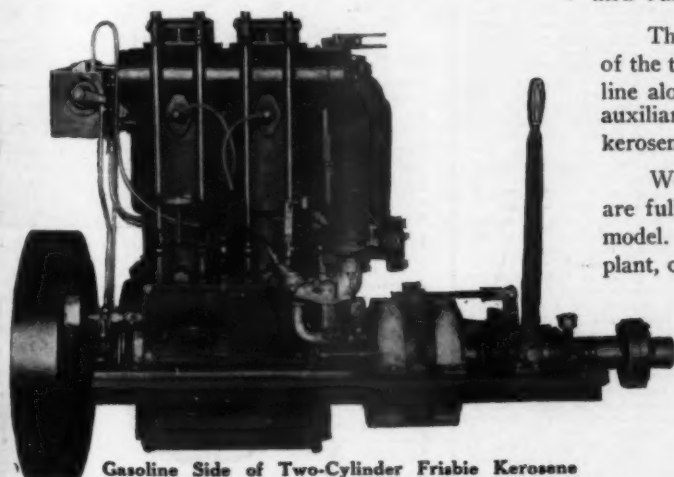
**E**CONOMY has always been the particular advantage of kerosene motors, but usually it was Economy at the sacrifice of Efficiency. In the new Frisbie Kerosene type we offer a motor which combines the economy of kerosene with the efficiency, reliability and other advantages of gasoline.

We believe this is the only kerosene motor made having *two absolutely separate fuel manifolds*—one for gasoline and one for kerosene. The use of two carburetors is common, but where the same manifold is used for both fuels maximum efficiency cannot be secured. A manifold proper for gasoline does not preheat the mixture sufficiently to gasify kerosene; on the other hand, a satisfactory manifold for kerosene causes a marked loss of power when used with gasoline.

The Frisbie Kerosene Motors run as well on gasoline as our regular gasoline motors. On kerosene they develop just 4.76% less power than on gasoline, a difference that need scarcely be considered. On kerosene they are as flexible in control as a gasoline motor, and run without smoke or odor.

These motors can be run on either fuel singly, or on any combination of the two, the latter giving even more power than can be secured with gasoline alone. When running on kerosene the gasoline carburetor acts as an auxiliary air inlet. Our special system of lubrication works perfectly with kerosene fuel.

We have been experimenting with kerosene devices for six years and are fully satisfied we have achieved the limit of efficiency with the present model. A Frisbie Motor of this type is now turning the machinery in our plant, operating on kerosene day after day with perfect satisfaction.



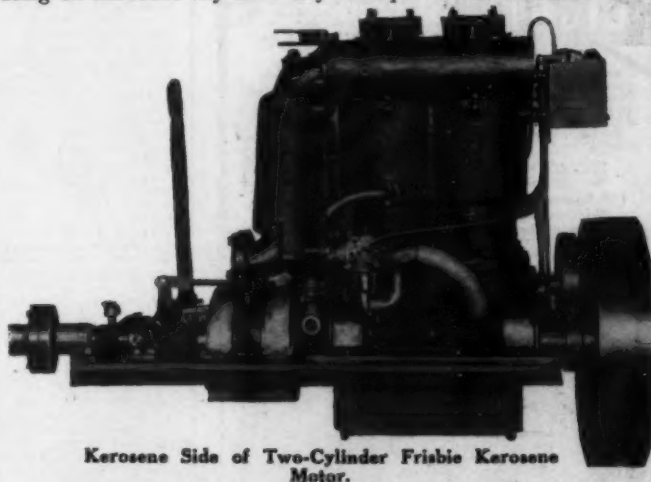
Gasoline Side of Two-Cylinder Frisbie Kerosene Motor.

The Two-Cylinder Kerosene Motor illustrated on this page has 6" bore x 6" stroke and is equipped with Atwater Kent Ignition, Paragon Reverse Gear, mechanical oiler, etc. Rated at 15 H. P.

**Price \$375.00**

We can also furnish the same Kerosene Attachment for all other Frisbie models.

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Advertising Index will be found on page 40.

# REGAL

## Small Four Cycle Engines

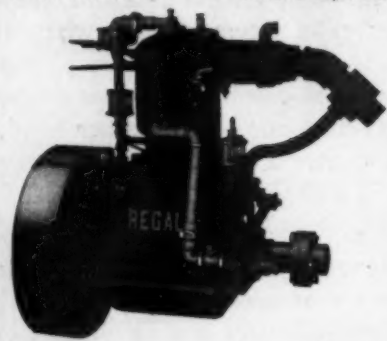
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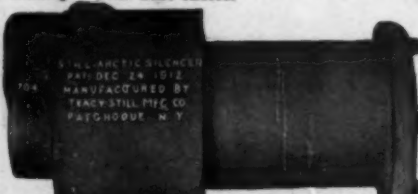
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**T RACY-STILL MFG. CO.** Patchogue, N. Y.  
Pacific Coast Distributors:  
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(Continued from page 52)

The writer has been collecting data for mosquito boat use ever since the war with Spain. As electrical engineer for the Bureau of Yards and Docks, United States Navy Department, all the United States Navy Yards throughout the country were visited repeatedly in connection with military matters, and our state of unpreparedness was shocking to anyone in a position to see the inside conditions.

Although the foundation of such a mosquito patrol corps is believed to be a step in the right direction, the writer does not for a moment wish to suggest that this or any other civilian movement can discount the urgent need of a powerful seagoing Navy based upon the expert recommendations of our General Board of the Navy, and an adequate standing regular Army, as recommended by the General Board of the Army. Our trained officers in both branches of the service are unquestionably the real experts who should direct our defense policies.

We have to-day many civilian movements in addition to the organization of yachts for patrol service, the United States Power Squadrons, and the writer's suggested Mosquito Volunteer Torpedo Patrol of the United States. The writer believes in all of these civilian efforts and indorses them, but let us not fail to look the real issue squarely in the face. With our present inadequate Navy destroyed, and with our present apology of an Army terrified and routed as in 1814, when Washington was captured and the Capitol and other public buildings burned, and with the hostile fleet or fleets of an enemy lying off our harbors preparing to shell our principal cities, what could we expect—for example—the very worthy gentlemen of the Naval Consulting Board to do? What chance would our fast yachts or our volunteer torpedo corps possess? The voluminous collection of names, figures and addresses upon industrial preparedness gathered at this time, a classified and neatly wrapped up in a package, would be highly appreciated by the enemy when he landed.

But it is with full recognition of the value of a first line of defense, a seagoing fleet, that the writer at this time suggests, not as a substitute, but as a mosquito auxiliary to a great seagoing fleet, the formation of the Volunteer Torpedo Patrol of the United States.

## Are Yachtsmen Patriotic?

(Continued from page 8)

size and type which form only about 99.9% of the total motor boats in existence may make application before July 1st to attend, and when they report at the place to be later specified by the Government, perhaps several hundred miles from their home port, fully equipped, provisioned and with tanks full of the precious fluid, their boats will be inspected by a board of naval officers, who, the chances are, have never been aboard a motor boat before. If they pass her, a naval officer will be assigned in charge for the week. You will be under the orders of this officer during the period, but nothing is said as to what would happen if you followed his orders and lost your boat. But such a calamity is very doubtful, for the knowledge of the naval officers as to motor boats and of all our harbors and local conditions is such that those things which many motor boatmen have been learning from actual experience for the last ten years do not amount to much after all.

The whole scheme, both as regards the civilian cruise, together with the part which the motor boats will take as far as it has already been announced, is so primitive and unpractical that it is hardly capable of belief that our Navy Department would allow such plans to be made public. From the intimations at least which the Government officials have been giving out for nearly a year, we expected that a practical and workable plan would be evolved capable of being followed by the several organizations of motor boatmen in this country which have preparedness as their only reason for existence, not to mention those older organizations which have seriously taken up the use of motor boats in time of war and the preparation of their members for naval service.

In this country there are thousands and thousands of motor boatmen whose love and knowledge of the sea and of things nautical would make them eagerly take up anything along these lines which would tend to make them better prepared to serve their country in time of need if our Government would only give them some tangible idea of what lines they should follow and what might be required of them. Every effort, both by individuals and organizations, has been made to have our Government specify what it wants the motor boatmen to do, but without success. Organizations have been formed with this particular purpose in mind, but so far the Navy Department has failed to give them any definite information as to how to proceed. Such organizations have been thrown entirely upon their own resources and are being compelled to work out their own salvation, and it appears that the Government is not even interested in what they are doing or desire to accomplish.

The Patrol Squadron is an example of what one body of public-spirited persons is doing in spite of the failure of the Government to co-operate with the motor boat owners. Five citizens got together and decided to build a type of boat which in their opinion and in the opinion of some of our country's best naval architects would be best suited to our country's use in time of war. Five craft have already been built, practically identical in design and size, and the success of these, even this early in the year, has practically assured that a number of duplicates will be built and put into commission before the season is over. These boats, which are 40 feet in length, by 8 feet 9 inches beam and 2 feet 6 inches draft, were designed by Swasey, Raymond and Page, and are powered with six-cylinder, 5 1/2 x 6-inch Sterling motors. The hulls are of the round bilge type and are controlled entirely from the helmsman's bridge forward. The motors are equipped with self-starters and when developing their full power at 1,400 revolutions per minute, showed a speed in the recent trials in Boston harbor of better than 25 m.p.h.

The owners of these boats of the Patrol Squadron propose to use them for numerous maneuvers during the coming season, and in this way hope to interest other persons in their plan and particularly those of boat. A few days after they were launched they were inspected by Hon. Franklin D. Roosevelt, Assistant Secretary of Navy, who made a trip in one of them from the City Point Station of the Boston Yacht Club to the Charlestown Navy Yard in a blinding snowstorm. It was reported that Mr. Roosevelt was very much impressed by the performance of these boats under such unfavorable conditions. These boats, while of fairly high speed, are not excessive in cost, and their accommodations are such that they may be used by their owners for cruising while they are not engaged in maneuvers or other squadron work.



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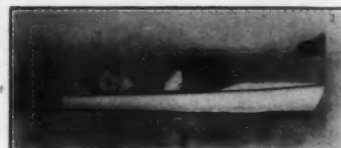
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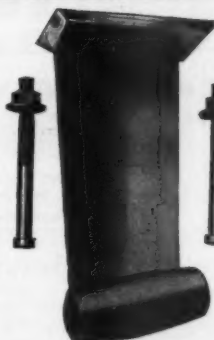
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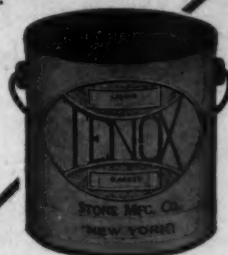
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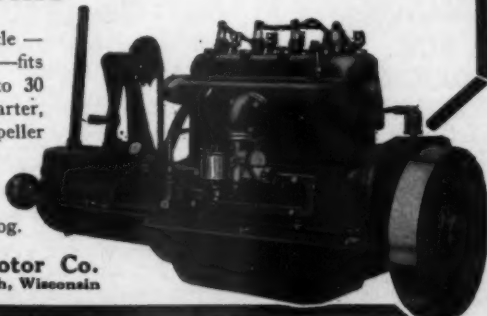
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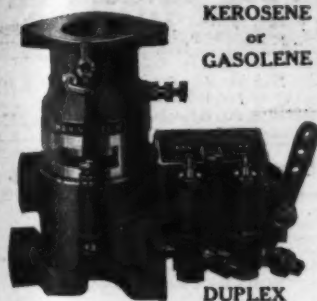
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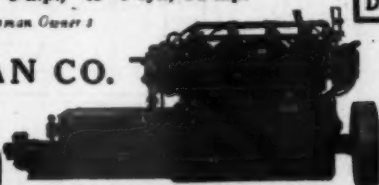
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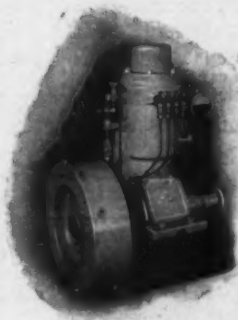
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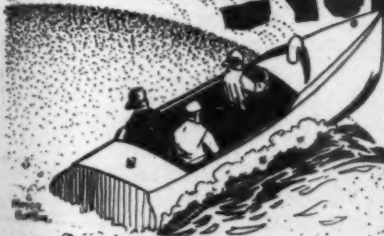
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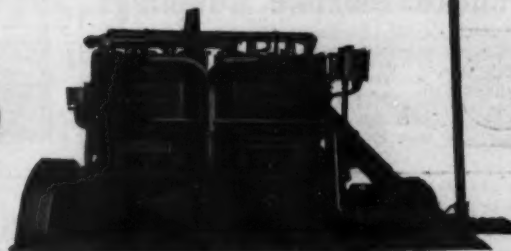


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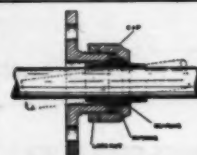
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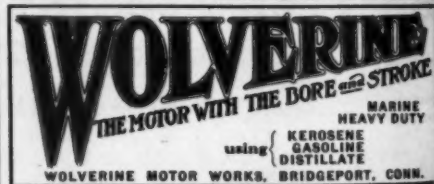
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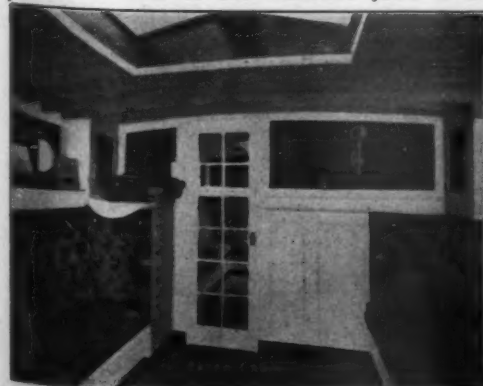
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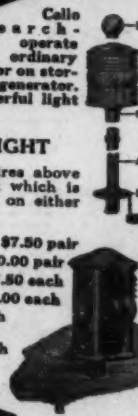
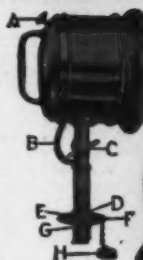
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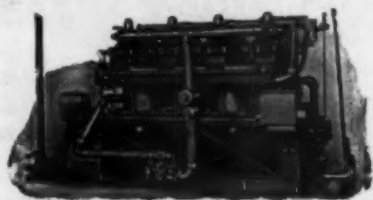
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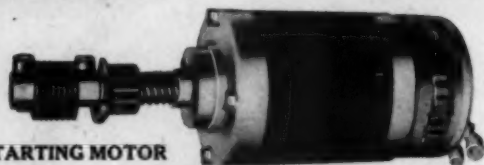
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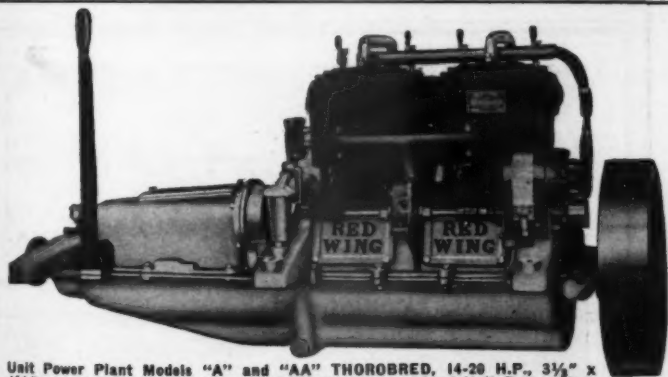
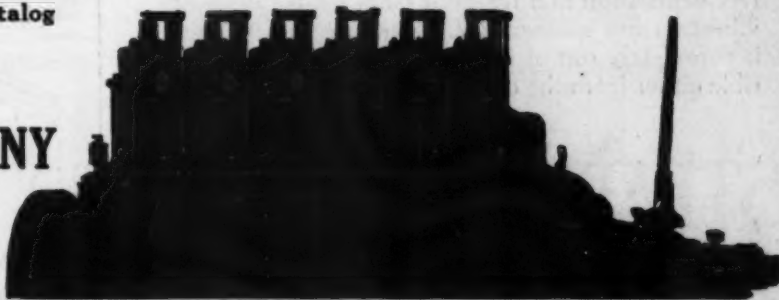
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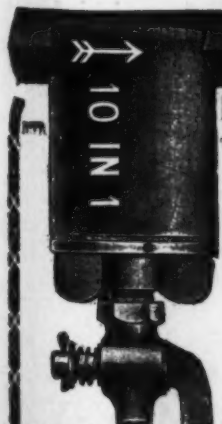
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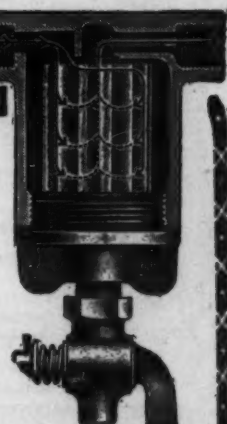
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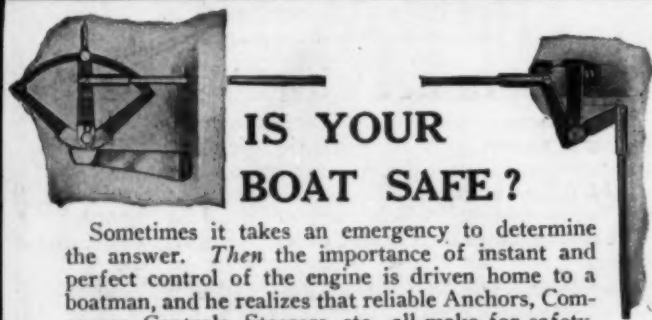
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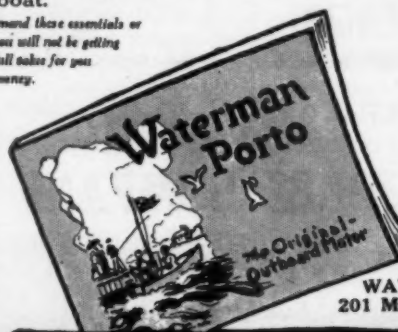
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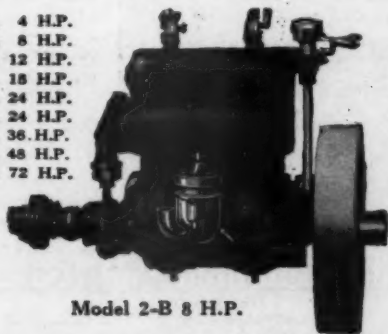
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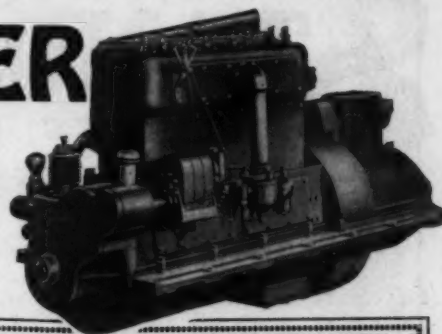
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are the best possible insurance against burned out bearings, scored pistons and cylinders, annoying delays and shut-downs due to faulty lubrication.



They are made in styles and sizes for every kind of gas—gasoline or oil engine, marine stationary or automobile. Equipped with pulley ratchet, gear or sprocket drive for easy installation on any engine.

Catalog P-64 giving full information gladly sent on request.

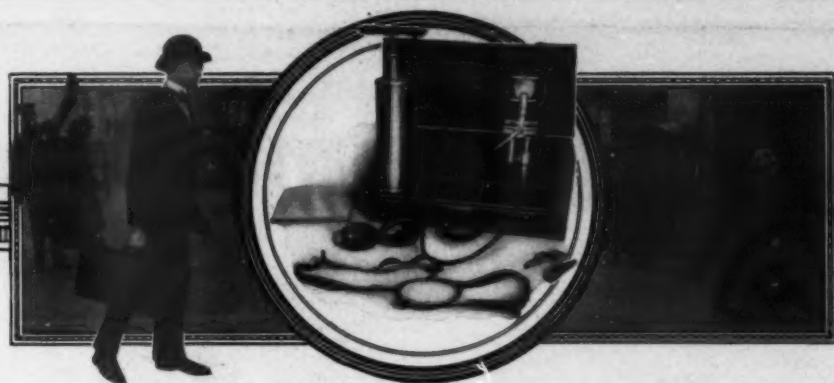
**DETROIT LUBRICATOR COMPANY**  
DETROIT, U. S. A.

Canadian Distributors: Canadian Lubricator Co.

Windsor, Ont., Canada

*Makers of the Stewart Carburetor*





## Announcing the new type B Pulmotor For Yachts and Yacht Clubs

Through drowning, hundreds of lives are lost each year—many needlessly sacrificed because of the failure of manual artificial respiration, or the delayed arrival of proper resuscitation apparatus.

**N**OW, for the first time, it is possible for yacht owners and yacht clubs to include in their equipment a simple, efficient, and inexpensive hand-operated resuscitation machine—employing the only principle recognized as correct by physiologists—that of accurately measured pressures.

This machine is the new Type "B" Pulmotor—a device so simple that any person of ordinary intelligence can quickly acquire sufficient knowledge of it to apply it properly in emergency.

Type "B" PULMOTOR is the first hand-operated machine *free from* the weaknesses and fatal defects of *pump-controlled* resuscitation devices.

Type "B" Pulmotor places the operator at his patient's head—not at the pump—free to devote his entire attention to the application of measured pressures—"measured" by means of the Pulmotor Control Valve—in his hands. Indicator Gauges show the operator the

precise air pressures exerted, both of inhalation and exhalation. These indicators also show the first fluttering resumption of normal breathing. And here is another vital feature:

*The patient can resume normal breathing while the mask is on—impossible with any other hand-operated device.*

These exclusive, patented, Pulmotor features afford such a wide range of *pressure CONTROL* that the operator may obtain any desired pressures for infant or adult. Yet they completely insure the patient's welfare and comfort.

This new Pulmotor weighs but 12 lbs., complete with carrying case—an *ideal hand machine to be taken anywhere in emergency.*

It may be obtained complete for \$115, a price which places it within the reach of every yacht owner, every yacht club and every bathing beach—wherever that emergency use may demand. Orders for early delivery should be placed at once. Write for descriptive folder.



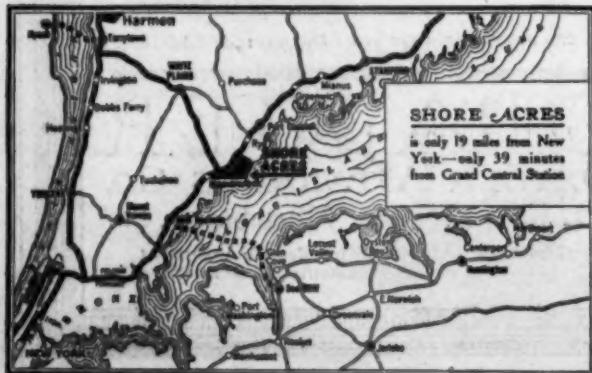
Valve (not pump) control of pressures

*There is but one genuine PULMOTOR, the genuine always bears the name DRAEGER.*

*The* **DRAEGER**  
OXYGEN APPARATUS CO.  
422 First Avenue Pittsburgh, Pa.

*Makers of Complete Mine Rescue Apparatus  
Agents for Wolf Safety Lamp Co. of America*

# The Ideal Home Spot



ON the edge of Long Island Sound, just nineteen miles (thirty-nine minutes by electric train) from New York City, at the quaint old suburban town of Mamaroneck, N. Y., is located **SHORE ACRES**, the ideal home spot for boat lovers and yachtsmen.

With fine macadam roads, rare trees, a beautiful club-house, deep water anchorage, over a mile of water-front, and all modern improvements, this property presents every possible advantage for a residence the year around, as well as a home for the summer. The countless attractions of Long Island Sound for boating, bathing and fishing,—the splendid motoring roads of beautiful Westchester County,—tennis courts convenient and golf links also in the neighborhood,—all contribute to the recreation and thorough enjoyment of life that is possible for residents of this community.

Shore Acres is the last available large acreage in Westchester County, fronting on the water and overlooking the Sound. Surrounded by wealthy estates and expensive homes, the intrinsic value of the land is great, without considering the unique advantages it possesses for motor boat owners. This should become the motor boating center of the country. Already it is the center of the most popular boating territory.

Rigid restrictions make certain the permanent desirability of this property for residences of refinement. The reputation of the Clifford B. Harmon Company, the unusual success of its many high-class developments, the ample financial resources which guarantee the fulfillment of all plans along the lines projected—these help to make Shore Acres one of the most attractive real estate investments we have ever offered.



# for Motor Boat Lovers

Long Island Sound

Orienta Point

## Motor Boats Supplied Free for Exclusive Use of Purchasers

IN order to insure a community of congenial interests, every purchaser of a plot costing \$1500 or more who buys before July 4th, 1916, and builds within a reasonable period will be given the exclusive use of one new motor boat supplied by the company, also a year's membership in the yacht club. The company will retain title to this boat, but in every other way it will remain the property of the resident.

For example, the purchaser of a \$1500 plot would have the use of a boat valued at \$200, while the buyer of an \$8,000 plot would have a boat valued at \$1000. Plots range in price from \$300 up, depending upon size and location, many of them fronting directly on the water. Boat house plots, \$200 up.

Especially attractive terms are offered for early acceptance. No effort will be spared to restrict our sales to the most desirable class of residents. The success of our boating community plan will not be endangered by a single undesirable feature.

Investigation will prove Shore Acres to be even more attractive than we have pictured. Conservatism in our statements permits us to promise you a pleasant surprise when you have learned the full details. The property is ready for your personal inspection at any time and is easy of access to anyone in the vicinity of New York City.

**CLIFFORD B. HARMON CO.**  
51 East 42d Street New York City



Write today for our handsome  
booklet describing Shore Acres,  
with engineers' map of  
property and many views  
of the surroundings.

Send the  
coupon  
at once

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B. Harmon  
Co.,  
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New York.

Gentlemen: Please send me  
booklet and map of Shore  
Acres, with full details of your  
Motor Boat offer.

Name .....

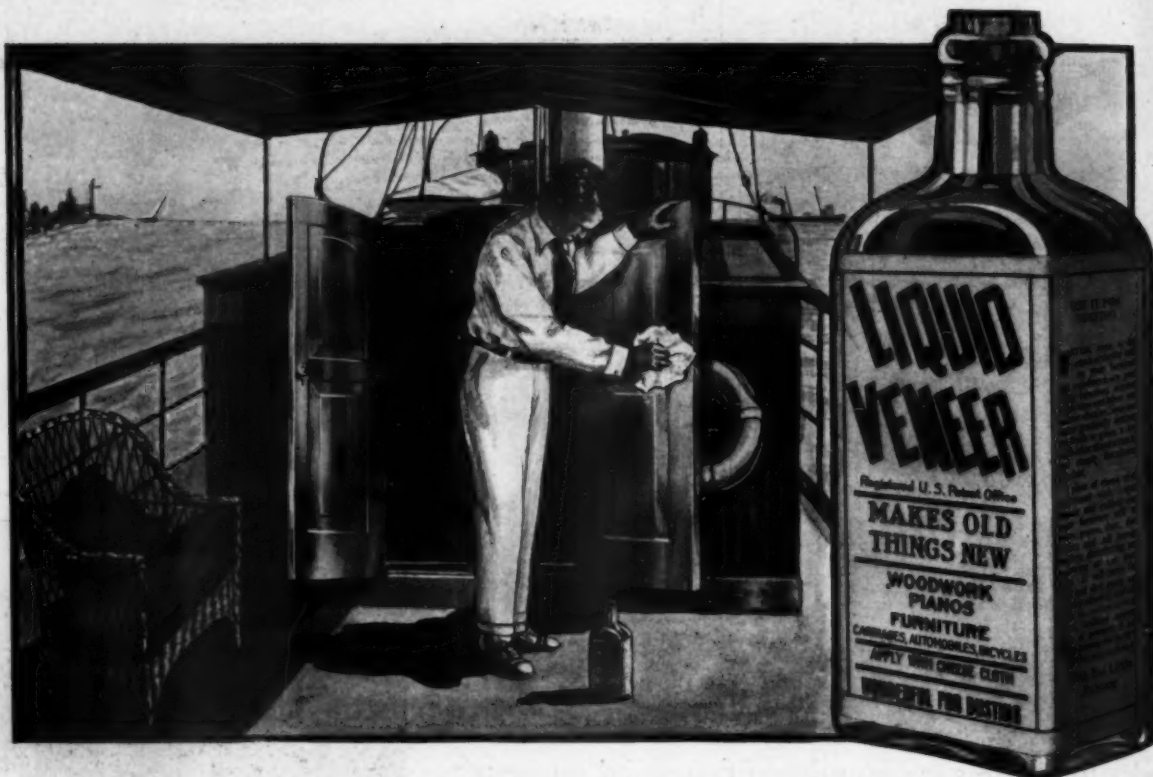
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Advertising Index will be found on page 40.

# LIQUID VENEER

The Greatest Polish and Cleaner  
The World Has Ever Known



## Makes Woodwork SHINE!

Have you ever used Liquid Veneer on the polished woodwork on your boat and noticed the instant transformation that took place, how all dust, dirt and spots disappeared, how the original newness and lustre returned—and with what ease and rapidity you secured these astonishing results?

Thousands of motorboat owners would be lost without Liquid Veneer. It keeps their boats looking just like new. It keeps the varnished and enameled woodwork shining, bright and clean. It saves expensive refinishing and increases the selling value of the boat so that it will command a higher price, if you ever want to sell it or exchange it.

Liquid Veneer is the one standard polish and cleaner, SAFE and RELIABLE, the choice of millions of housewives the world over for the last fifteen years. It is used on the most expensive and finely finished furniture, on white enamel, on nickel, brass and copper, and on automobiles. It is sold by nearly every grocer, drug, hardware, paint and furniture store, from coast to coast—another indication of the great popularity and the confidence it enjoys.

Unlike other polishes, Liquid Veneer leaves no oily film but dries instantly, imparting a gloss and beauty of finish even on woodwork that has become dull and dingy through neglect.

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For a limited time only, we will send to any motorboat owner, upon receipt of 10c (stamps or coin) a liberal trial bottle of Liquid Veneer and a fine large 25c L-V crepette Dust Cloth for applying it. Make this trial. See for yourself! Send us the coupon at once and take advantage of this liberal offer.

**BUFFALO SPECIALTY COMPANY**  
Buffalo, N. Y.                      Bridgeburg, Ont.  
U. S. A.                              CANADA

BUFFALO SPECIALTY COMPANY, Buffalo, N. Y.

Enclosed find 10c for which send me one 25c L-V Crepette Dust Cloth and one trial bottle of Liquid Veneer, as per your offer in "Motor Boating."

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My motor boat supply dealer is.....



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Saving Prices. Write for  
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85 Chambers St. - 67 Reade St.  
NEW YORK

## Put a Brake on your Boat? **JOE'S Reverse Gear**

### Not a Brake.

But safety demands perfect control for your boat—stopping as well as starting, reversing as well as driving forward.

Joe's Reverse Gear does it all and is just as important for controlling a boat as a brake for a railroad car or automobile.

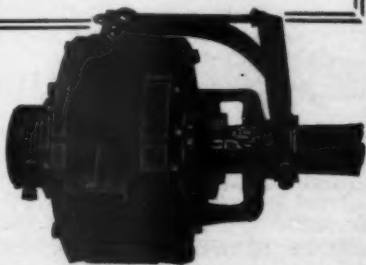
Joe's Gears are made for fast and medium speed boats, for big heavy cruisers, auxiliaries and commercial boats of all sizes.

Joe's Positive Neutral One-Way Clutches are made for high speed motors. Joe's Safety Rear Starter takes all the risk out of engine starting. Adjustable frame or bulkhead bracket.

Write today for complete catalog.

The Snow & Petrelli Mfg. Co.  
New Haven, Connecticut, U. S. A.

Agents: J. King & Co., 10 Church Row, Limehouse, E. London, Eng.; L. H. Coolidge Co., Seattle, Wash.; W. C. Diabrow, Jr., 71 Cortlandt St., New York City; Wood, Vallance & Leggat, Vancouver, B. C.; Shea Sales Co., Montreal; A. R. Williams Mch. Co. Toronto; W. D. Foreman, 1425 Michigan Ave., Chicago.



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## Are Your Electrical Accessories "NORMA"—Equipped?

From the standpoint of comfort, pleasure and serviceability—your boat is no better than its ignition apparatus, lighting generator and starting motor.

### THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust, Combination Bearings

## SPLITDORF COMMON SENSE SPARK PLUGS

There's a Splitdorf Plug best suited for YOUR motor.

The imported India ruby mica insulation is wound laterally. This prevents any chance of oil seeping through. The 18 and 20 layers of mica are proof against the breaking-down effects of high tension current and accounts for the long life of

## SPLITDORF Spark Plugs

With the Green Hexagonal Jacket

**SPLITDORF  
ELECTRICAL CO.**  
NEWARK, N. J.





## Will You Accept This 30% Reduction in the Price of Gasoline?

**T**HE only ones to whom we can not offer this saving are the present users of K-P Piston Rings. We have already saved it for them! And their praise of K-P Rings is causing this **SIDE-LOCKED AND GROOVED**, actually **COMPRESSION TIGHT**, K-P Ring to displace all other rings as fast as we can make more K-P's.

K-P Rings not only save 30% to 40% gasoline—but increase power 25%—prevent scored cylinders—decrease carbon deposit, ride ported engines without pinning—have no equal for Marine Engines.

K-P Rings present a closed circumference—compression tight—at every point, when normal or expanded. The facts and proofs will cost you only a postage stamp. Write us today for booklet—"Economy and Power."

### KEYS PISTON RING CO.

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## MORRISTOWN Marine Motors

The Highest Quality Motor  
of Its Size and Price  
Made in America

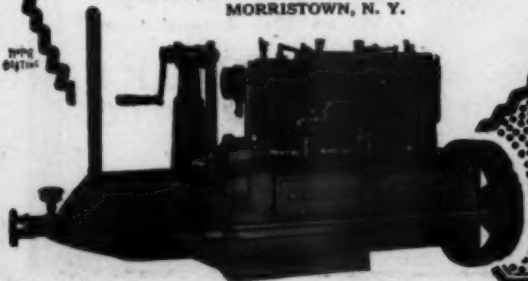
That is a pretty strong statement, we admit, but we have the courage of our convictions and invite the most searching investigation, and comparison with any other motor of similar power, regardless of price.

Look at the brief list of features. The many others which we haven't room to mention, including quality of materials and workmanship, you will find equally satisfactory. Light enough for a hydroplane, fast enough for an express runabout, powerful enough for a cruiser.

Weight, 825 lbs., complete; aluminum crank case; heavy crank shaft; heavy flywheel; large bearings throughout; die cast nickel babbit bearings with laminated shims; manganese bronze connecting rods; one-piece cam shaft, easily removed; high tension dual magnets; rotary gear water pump; constant level splash lubrication with gear oil pump; Joe's reverse gear on base; rear starter; Schenker carburetor; many other features.

Write today for complete description.  
Two Cycle Motors 4 to 15 H. P.

Morristown Boat & Engine Works  
MORRISTOWN, N. Y.



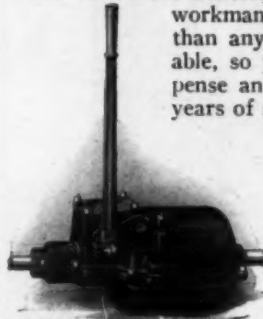
## GIES REVERSE GEARS

### Why Don't You Have a Gies Reverse Gear in Your Boat?

Gies Gears are made in various sizes of open and enclosed type suitable for all marine motors up to 40 H.P. at 1000 R.P.M. The prices are so low that you will be surprised how little the model you want will cost you.

Large demand, ready sale and consequent quantity production has cut our cost per gear to the minimum. There are over 30,000 Gies Gears in use, making new friends and customers for us every day. We give our patrons the benefit of Gies popularity by making our prices as low as possible.

Our Gears are honestly made, with the best of materials and workmanship. They have fewer working parts than any other gear. All parts are interchangeable, so you can replace any part at slight expense and make the gear as good as new after years of service.



ENCLOSED TYPE  
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Model B—\$42.00

Write today for our latest catalog

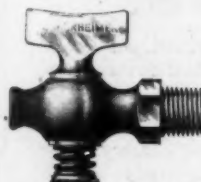
**GIES GEAR COMPANY**  
45 East Fort Street Detroit, Mich.

## LUNKENHEIMER

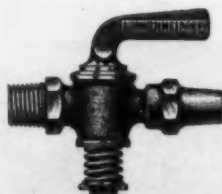
### GROUND KEY WORK for gasoline, air, oil, water, etc.,



Combined Priming Cup  
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Gasoline Cock with S.A.E.  
Flared Tubing Union.

is far superior and more reliable than the class of goods usually sold for motor boat use.

The special bronze composition used has excellent wearing or bearing qualities—an important feature, and the one which determines the life of the cock.

The key is ground to a perfect bearing in the body and when finished, is tested with air while submerged, to insure absolute tightness.

The spring key, an original feature in Lunkenheimer Ground Key Work, compensates for wear and prevents unsettling when placed on vibrating machinery.

The design is neat and the workmanship is Lunkenheimer "Quality"—a standard unequalled.

The extensive line, together with a multitude of other high grade Motor Accessories are fully described in our

Motor Accessories Catalog No. 4.  
Write for a copy.

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"QUALITY"  
Largest Manufacturers of High Grade  
Engineering Specialties  
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**Marine Hardware**

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**B**

For the Bottom of Yachts and Vessels  
→ STEARNS-McKAY ←  
**MARBLEHEAD ANTI-FOULING  
BOTTOM PAINT**



**SAVES ITS FIRST COST MANY TIMES OVER**  
One coat this Fall keeps out moisture and prevents rot and decay.

**Light Green—Emerald Green—White**

The most powerful Anti-Fouler and Preservative known. No other Bottom Composition has been successful in Tropical waters. It has a wonderful, hard, slippery finish that takes a high polish for racing. It is not a copper paint and is non-corrosive on steel. For top sides, yacht semi-enamel white and gloss black.

**STEARNS-McKAY MFG. CO.**  
MARBLEHEAD, MASS, U. S. A.

**MORTON**

16 H.P. 4 Cyl. 4 Cycle

**\$150** **\$150**



**The Powerful Overhead-Valve Motor**

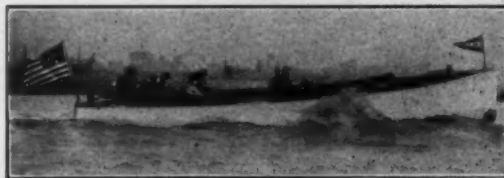
If you know good motor engineering when you see it, you will be surprised at the thorough quality we have been able to build into the 1916 Morton Motor at \$150. Not only in the design, but also the materials and workmanship, you will find that only the best of everything has been used. Our long experience in producing vital motor parts for high-grade automobile manufacturers is a guaranty of our ability to produce as good a motor as you want to own.

Overhead Valves	One-Piece Camshaft
Block Cylinder Casting	Bore 3 1/4", stroke 4"
Intake Passage in Cylinder Block	Four-Cylinder, Four-Cycle

If you have a fast launch or runabout, hydroplane, or cruiser, write today for full information on the 1916 Morton Motor.

**MORTON MOTOR COMPANY, 46 East Lafayette Ave. DETROIT, MICH.**

**A VIM**  
**Will Do It**  
**FOR YOU**



St. Louis, Mo., Mar. 12, 1916.

VIM MOTOR CO.  
Gentlemen:

I've got into the habit of writing you about once a year regarding my 10 h.p. "Vim." Last year I wrote you, mentioning my former motor in my letter. Well, this is my fourth season of "Vim" and I am a little disappointed. I had hoped to find something wrong, so that I might take my engine down just to see what was inside, but no such luck. When I turned her in last December after an 84-mile trip in one day (besides five hours hunting the same day) I found her to finish just as she did the first day I bought her. Not a single bolt has ever been taken off for purpose of repairs. The compression is as good as the first stroke she ever made. The bearings are tight as ever; in short, the engine is a marvel for durable service. I've run at least 10,000 miles and no penny for repairs in sight yet.

PETER J. NETZGER, 4441 Minnesota Ave.

What's the use taking chances on your motor—put in a "Vim." There are three types in all sizes, Speed, Pleasure and Heavy Duty. Each is the best in its class. Our thousands of users say they are the best—it's not our word you are taking. Write now for catalog and full information.

**THE VIM MOTOR CO.**

2806 Water Street, Sandusky, Ohio, U. S. A.

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FOR MARINE USE



Send for Catalogues  
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MOTT'S "NAIAD" Plate  
2001-Y DIMENSIONS: Over  
all from left to right 19½";  
back to front including handle  
20"; height from deck to top  
of seat 13"

Net Wt. 52 Lbs., Price \$49.50  
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to front 16"; height from deck  
to top of seat 16"

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**The J. L. Mott  
Iron Works**  
5th Avenue and 17th St.  
NEW YORK CITY

**THESE** are the  
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Closets for use  
either above or be-  
low the water line.  
Both have a 3" instead  
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We also have a com-  
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water heaters, galley  
and pantry sinks;  
pumps for bath, lava-  
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cessories, etc.



## VALLEY BOATS



21 Foot Valley Runabout



22-Foot Fauber Hydro Runabout

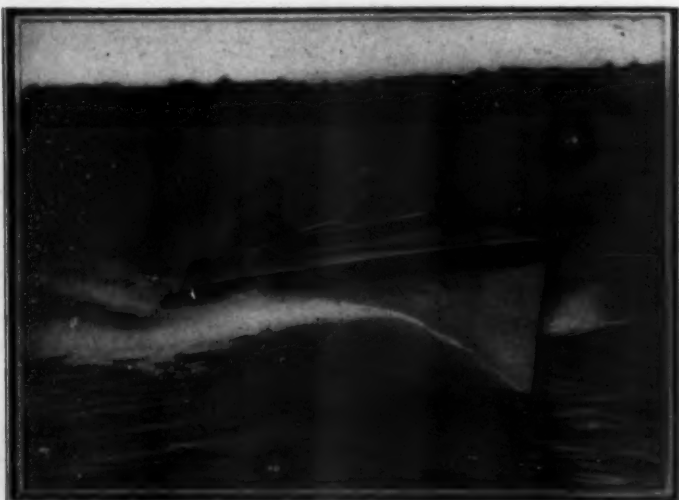
These are two selections from our complete line of "VALLEY" Boats. The one is our 21 foot mahogany runabout which makes a speed of from two to 21 miles per hour with a 20 H.P. motor. It is especially equipped for comfort and ease of handling. Capacity, six persons.

The boat at the right is a special 22 foot, 5-passenger Fauber Hydroplane with a speed of over 35 miles per hour. It is very staunch and seaworthy and makes an ideal speed runabout for use in the warm summer months.

We can guarantee satisfaction because "VALLEY" Boats are designed right and built from selected materials and are completely tested out before shipment.

Let us book your order now for June or July delivery and thus avoid a rush job and possible disappointment on delivery. Tell us your requirements and let us submit to you prices and description.

**VALLEY BOAT COMPANY**  
River St., Saginaw, Michigan, U. S. A.



## Racine<sup>wis</sup> Motor Boats

and cruisers are used by U. S. Government in Life-Saving and Lighthouse service, by foreign governments, by institutions and individuals everywhere. *Racine<sup>wis</sup>* is a name backed by twenty-one years of boat building skill. It means speed, power, comfort, safety and dependability in boats.

Write for catalog of speed and semi-speed family launches, motor boats, cruisers, rowboats and America's finest canoe—the *Racine<sup>wis</sup>*. Please mention your preference when writing.

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1615 Racine Ave. Racine, Wisconsin

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If it won't, take it off  
and install an

## OBERDORFER · BRONZE GEARED PUMP

Allowing your motor to run hot is the most ruinous thing you can do. It not only eats up the gasoline and oil, but it warps the valves, takes the temper out of piston rings and valve springs, and is liable to score the cylinders and burn out bearings beyond repair.



An Oberdorfer Pump will insure the highest degree of reliability for your cooling system. It is built especially to secure the three qualities

shown at the right, and it performs these absolutely without failure.

Leading quality engine builders, including Erd, Red Wing, Scripps, Smalley, Loew-Victor, Gray, Fairbanks-Morse, Mohawk and Lamb, use Oberdorfer Pumps for standard equipment.

Write today for prices and full information.

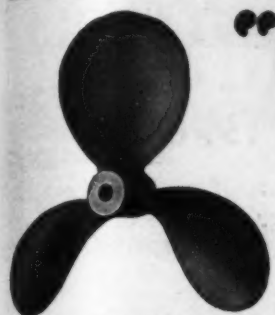
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1st, Distributes  
water in  
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portion to  
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speed.

2nd, Gives  
a positive  
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even at the  
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out priming





Every "HYDE" has this

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YOU may think you are getting all the speed out of your boat, but do you know it? Your engine may be delivering the power, but is your propeller utilizing it? Don't be satisfied with guesswork. Get a

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and secure the maximum speed and efficiency from your outfit. The wide range of diameters and pitches insures a correct HYDE for every type of boat.

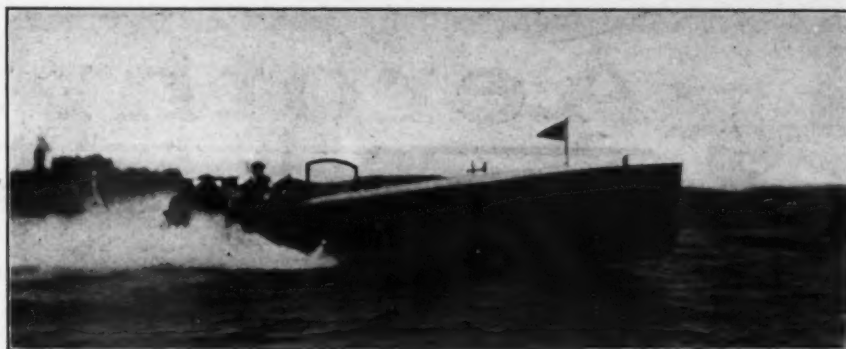
We also make

## THE GALE PROPELLER

It meets the demand for a good, low-priced wheel. Made from regular HYDE patterns in the same diameters and pitches.

CATALOGUE AND PRICES FREE UPON REQUEST

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### ELIMINATING THE WEAK SPOTS IN BOAT EFFICIENCY

**The FACTORY** Three-quarters of an acre of floor space devoted to producing fast boats. Every modern facility for high-grade work, and for health and comfort of employees—the first step in efficiency.

**The MEN** A loyal and enthusiastic force, organized in all departments, produce Albany Boats under the personal supervision of John L. Hacker, Vice-President and Designer.

**The BOATS** Speed, seaworthiness and reliability—all famous qualities of Albany Boats, are combined in this handsome, luxurious craft. A tried and true product—every detail of which was proven before offering for sale—thus ensuring the owners a sense of pride and secureness never before obtained.

It was a standard Albany runabout that won the Southern Championship, and the Tortoise also won the Australian Championship in February. Pretty good for mid-winter!

**PROOF** Repeat orders from discriminating buyers. You are welcome to our shops. Have a ride and learn the supreme enjoyment in using Albany Boats.

An illustrated catalog of runabouts or express cruisers on request.

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MAIL—BOX 530, ALBANY, N. Y.

# ACKLEY BOATS

## The De Luxe Productions of the V-Bottom Type

**A**CKLEY Boats are in a class by themselves when it comes to V-Bottom craft of high-grade construction, up-to-the-minute design and luxurious finish. Although we build boats of all sizes and types up to cruisers 50 feet long, Sea-Going V-Bottom Runabouts are our specialty and we acknowledge no superior in this line.

Ackley Runabouts, from 16 to 30 feet in length, are among the fastest boats of their size on the market. And it is correct design, not unduly light construction, which makes them so fast.

They are as staunch and seaworthy as any pleasure boat can be built. Designed strictly for rough water use, with high free board and a type of underbody which prevents pounding and rolling. Speeds up to 35 M.P.H., depending upon power plant used.

Comfort, safety and the honest pride of owning a su-

perior boat are the advantages enjoyed by the owners of these runabouts. Hulls are finished with eight coats, and may be had in tan, lavender, lemon, wine, black, white, etc., the same as high-grade automobiles. Planking is treated with a solution that insures against rot and plant life, and we use a special surface filler that guarantees a permanent high-grade finish. White oak is used exclusively for our frames.

We also build hydroplanes, canoes, rowboats, folding portable boats, boat frames, planked hulls and cruisers for southern waters.

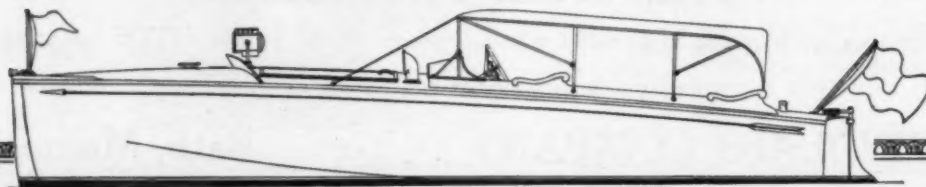
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## ACKLEY BOAT BUILDING COMPANY

S.W. Corner Main and Water Streets

CINCINNATI, OHIO

AGENTS FOR RED WING THOROBREDS AND SCRIPPS MOTORS



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## "The Aviation Motor for Rowboats"

Aerothrusting—newest, simplest, most fascinating method of boat propulsion. You simply fly over the water with an Aerothrust, for the propeller is entirely above the water—

### Will Drive a Boat Wherever a Boat Will Float

Simply clamp this aviation motor to your rowboat or canoe—give the crank a turn and away you go. A big, proven success for three years—hundreds of users testify to Aerothrusting's practicability and fascination.

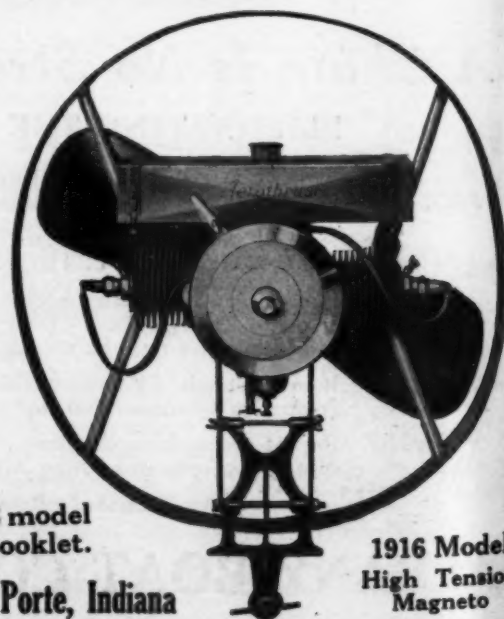
Aerothrust burns either gasoline or kerosene; is perfectly portable; a woman or child can carry, start or operate it.

When not in use in boat, is available for stationary work—also drives sled or iceboat in winter. A marvelous motor of a hundred uses.

Agents  
Dealers  
Wanted

Complete with high tension Magneto—the 1916 model is a wonder. Write today for illustrated booklet.

**AEROTHRUST ENGINE COMPANY, 309 Washington St., La Porte, Indiana**



1916 Model  
High Tension  
Magneto



# Reliability That Is Worth Money

For a big cruiser or a heavy commercial boat there is only one kind of an engine to buy. That is a reliable engine,—one that will endure the hardships of continuous severe service without delays for repairs and replacements.

The other important factor is economy of operation and maintenance. Low fuel cost can be obtained by using kerosene, and low cost of maintenance depends upon accessible construction for rapid adjustments and overhauling.

## Wright Heavy Duty Marine Engines

Reliability and durability is built into the Wright Engine by the quality of material and strength of construction we use. Crankshaft and connecting rods are hand-forged from solid billets of 25 to 40 point Carbon Steel.

Economy of fuel is secured by our overhead valve construction, which gives 20 to 25% more power per unit of fuel than any other type of engine. We also equip these engines to burn kerosene, using one carburetor for the

gasoline when starting and a separate carburetor for kerosene, also a special generator for GASIFYING the kerosene thoroughly.

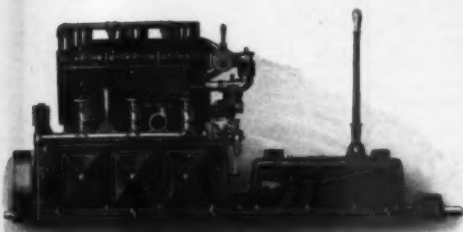
Economy of maintenance is secured by the infrequency of repairs and the wonderful accessibility for quick adjusting. For instance, the entire valve mechanism and camshaft can be removed without taking off any other parts.

Wright Engines are equipped with magnetic make and break ignition, using a Bosch Low Tension Magneto. The spark is advanced or retarded through the magneto, the same as a jump spark system.

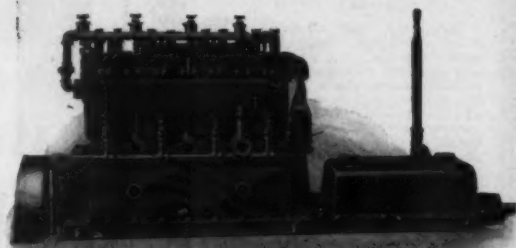
Reverse gear with large spurs is built on same base casting with engine and entirely enclosed. No gears are in use on forward drive and the thrust is taken up by large adjustable Ring Type Thrust Bearings. Reverse gears can be removed without disturbing engine crank shaft.

3-Cyl. ....	6	x 7 1/8"	22-30 H. P.
3-Cyl. ....	7 1/2	x 9	35-45 H. P.
4-Cyl. ....	6	x 7 1/8"	30-40 H. P.
4-Cyl. ....	7 1/2	x 9	45-60 H. P.
6-Cyl. ....	6	x 7 1/8"	45-65 H. P.
6-Cyl. ....	7 1/2	x 9	70-90 H. P.
6	x 7 1/8"	runs from 400 to 550 R. P. M.	
7 1/2	x 9	runs from 350 to 475 R. P. M.	

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Reliable Agents Wanted.



Three-Cylinder Wright Kerosene Engine



Four-Cylinder Wright Kerosene Engine

WRIGHT MACHINE COMPANY

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AN LA ENGINE  
FOR EVERY PURSE  
AND PURPOSE.

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L-A 2-cycle motors in both single and double cylinder types and made in sizes from 2 1/2 to 12 H.P., and are noted for their extreme simplicity, big power, and qualities of absolute dependability.

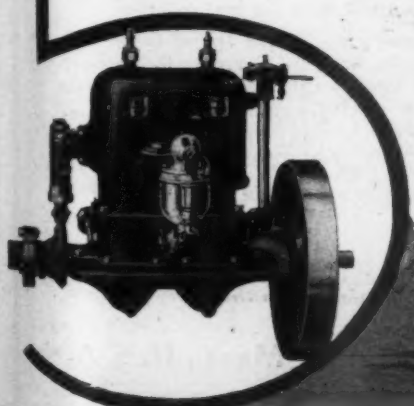
L-A 4-cycle motor is one of our newest models. It is a 4-cylinder, 14 H.P. power plant with cylinder cast *en bloc*. A very clean, compact and accessible engine that will give splendid service in pleasure boats, work boats or speed boats.

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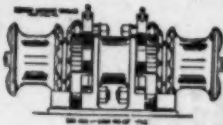


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At upper right, the 70-ft. LANAI, owned by Ex. Com. A. C. James, of the New York Yacht Club.

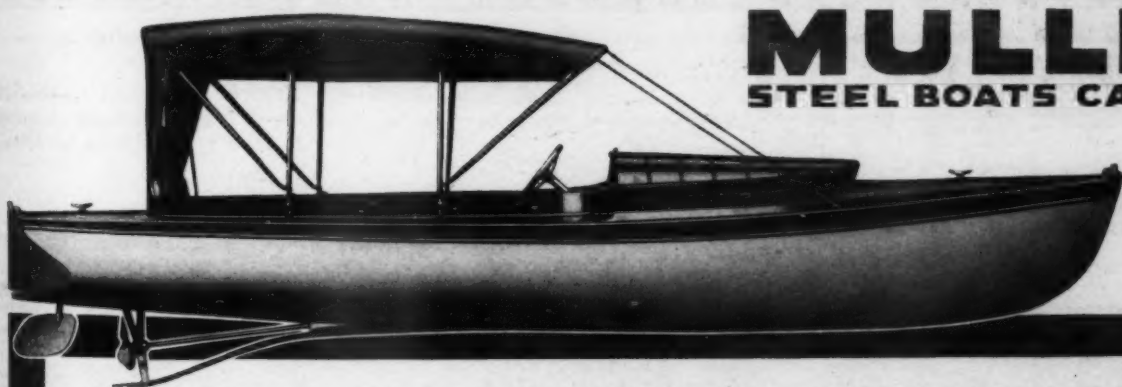
Lower left, 77-ft. DORINDA, built 1915 for Henry W. Savage.

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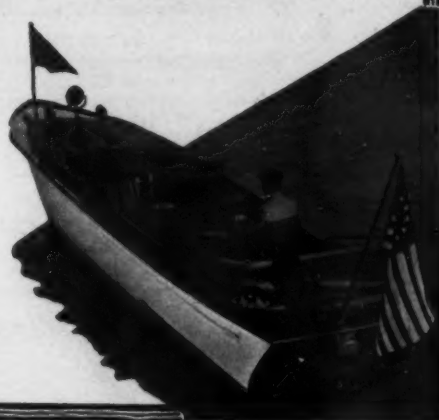
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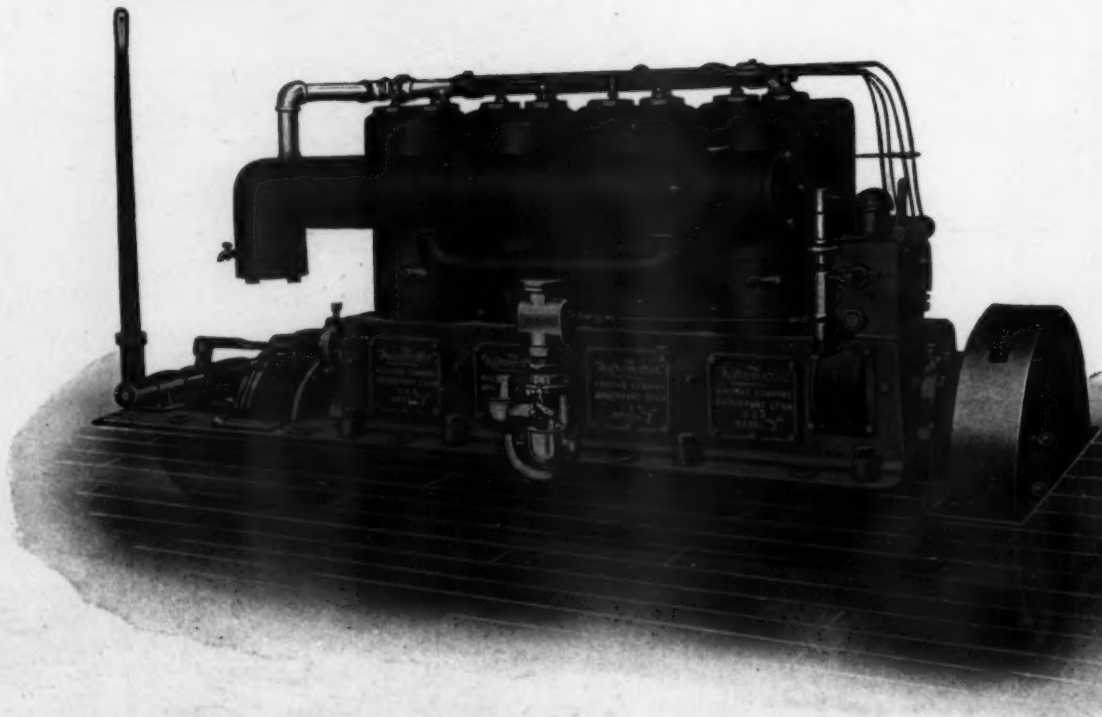
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## Shipshape

This picture of the engine room of the **TARPON II**, one of New York's express cruisers, shows the trim, compact design of

**Wisconsin**

**Motors**

with all working parts completely enclosed. There is plenty of oil in the bearings, but none in the engine room to soil hands or clothing.

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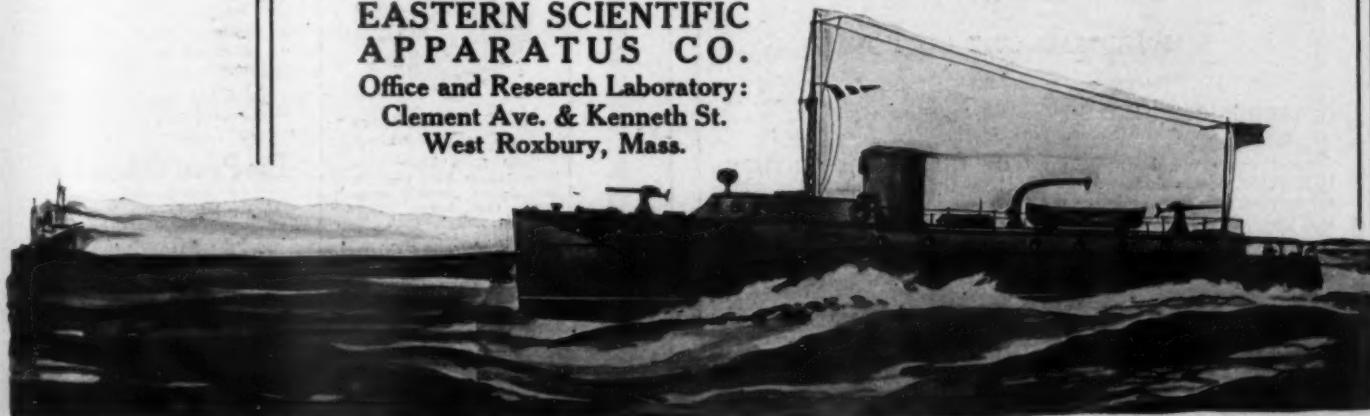
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for boat  
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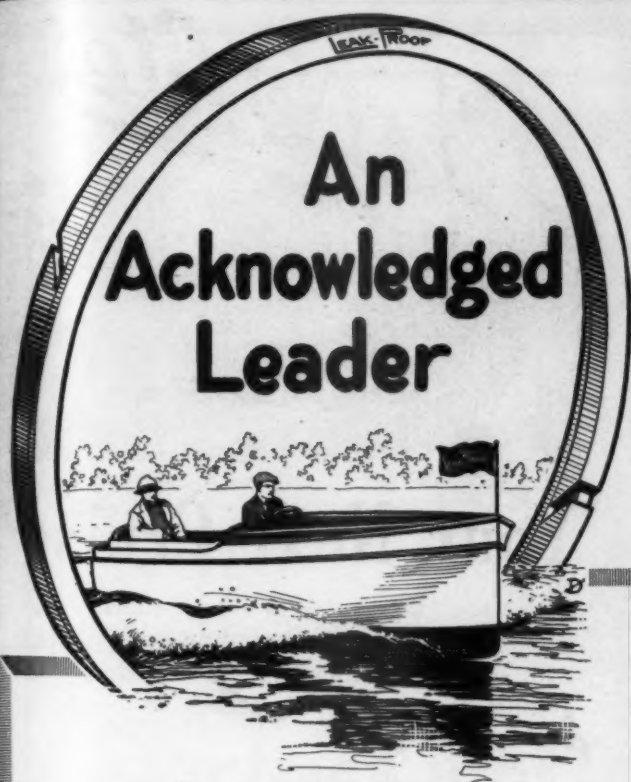
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**MATTHEWS CRAFT** 

PEOPLE sometimes make mistakes in their initial purchases, whether they buy pickles or power yachts. But they seldom make the same mistake twice.

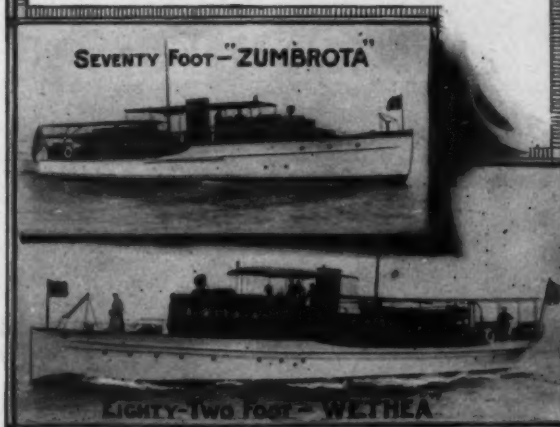
Mr. E. H. Ringling's first power yacht was a "Matthews." Today he is the owner of the five Matthews Craft shown herewith.

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By adopting the Berling Magneto, the Winton Marine Motor has concurred in the verdict of the Speedway, Sterling, Van Blerck, Watertown and Wisconsin.

The Berling won its place on the big vertical Winton "8" because the Berling is built to stand marine conditions. Its one-piece frame encloses all the working parts. That protects the Berling from oil and water.

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# Berling Magneto

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### EVINRUDE

DETACHABLE ROWBOAT & CANOE MOTOR

it won't take long to load your boat with supplies and place your guests aboard-ship. You will find the Evinrude mighty convenient—and at times it's a real necessity, too. When the power plant is out of commission or something else goes wrong, the Evinrude will tow you safely home.

To owners of large power boats and yachtsmen the Evinrude Four-Cycle Twin makes a special appeal. It has more speed, more power and is free from vibration. The 1916 Evinrude catalog tells all about it; also about the many new improvements in the Single Cylinder models.

*Tear out and mail the coupon] and a copy of the new catalog will be mailed you at once.*

## Evinrude Motor Co.

492 Evinrude Block Milwaukee, Wis.

Over 60,000 Sold

Distributing Branches:

69 Cortlandt Street, New York, N. Y.  
214 State Street, Boston, Mass.  
436 Market Street, San Francisco, Cal  
211 Morrison Street, Portland, Ore.



Evinrude Motor Co.

492 Evinrude Block  
Milwaukee, Wis.

Please send me the 1916  
Evinrude catalog

Name .....  
Address .....  
City ..... State.....



V  
1  
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# DELCO-LIGHT

## Electric Light for the Motor Boat and for the Summer Cottage or Country Home

Delco-Light is a Practical Electric Plant for the Motor Boat or Yacht—the Summer Home or Country Place.

The gas engine and dynamo for generating current are combined in one

compact unit. It is amazingly simple and sturdy in construction. A child can operate it. The gas engine starts itself on the turning of a switch and stops automatically when the batteries are fully charged.

It will furnish any number of lights up to 40 or 50 and will also provide power for operating small machines—thus adding especially to the convenience and comfort of country living.

When installed in the motor boat or yacht Delco-Light supplies a complete lighting system, giving you all the lamps you can use with ample power back of them—at minimum cost.

*Delco-Light is manufactured and guaranteed by the same company that has made Delco Cranking, Lighting and Ignition for Automobiles the standard of the world*

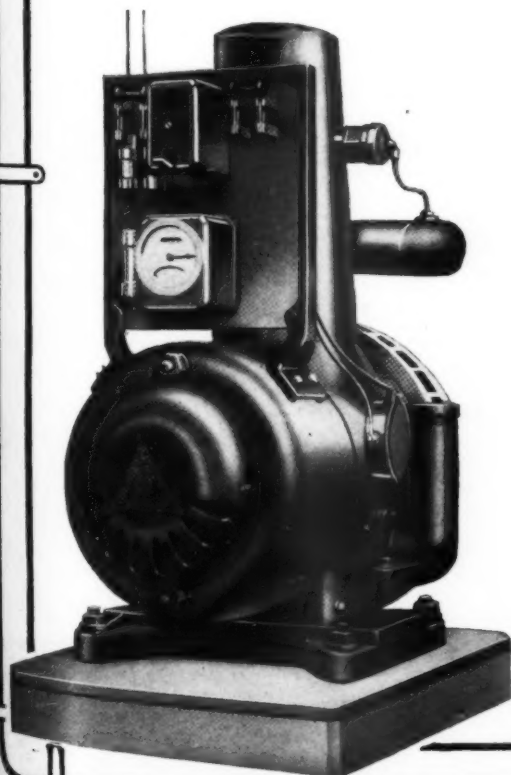
*Write for the illustrated folder fully describing Delco-Light to*

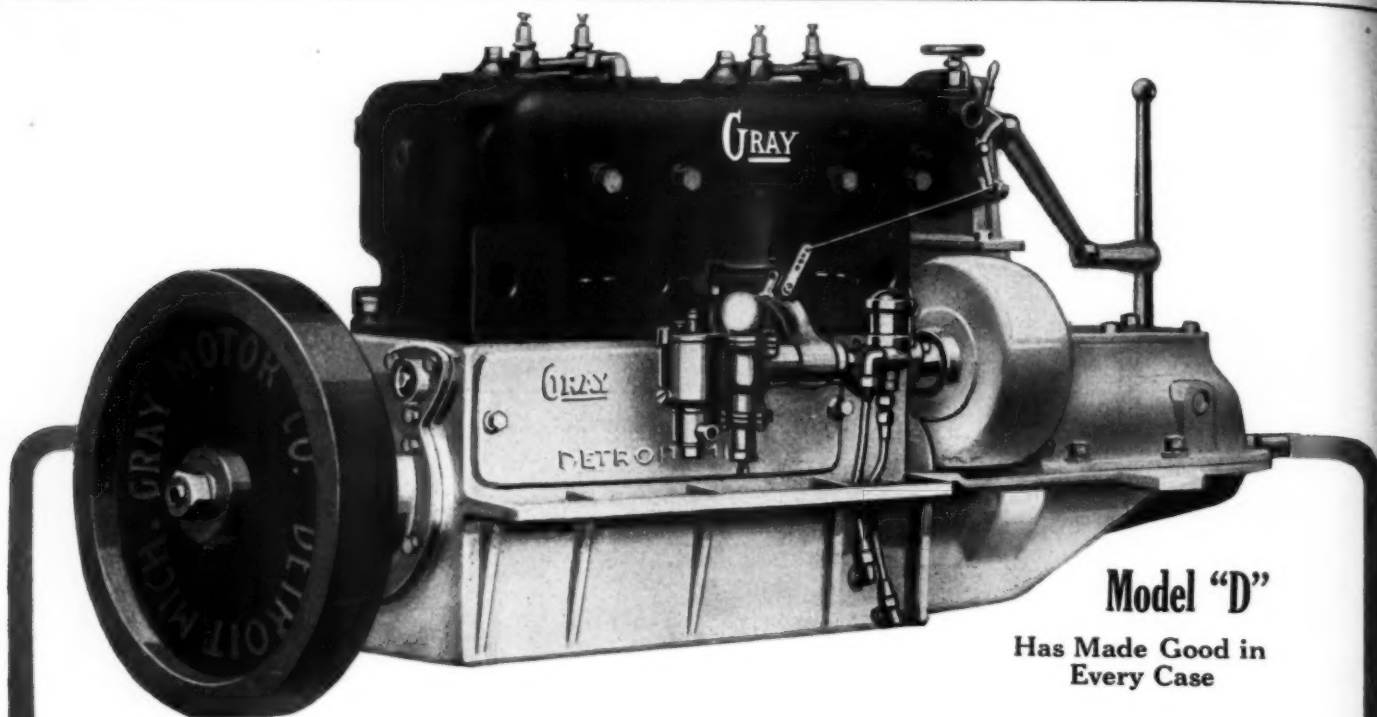
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DAYTON, OHIO

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Model "D"

Has Made Good in  
Every Case

# Delivery Now=Today

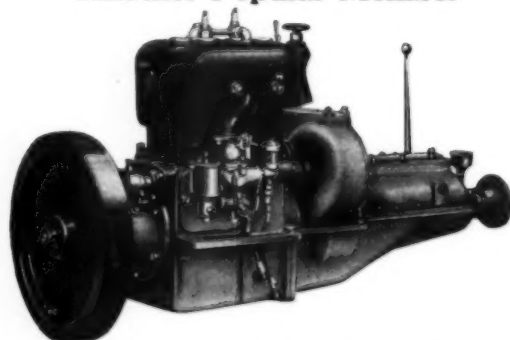
## World's Most Popular Four-Cycle Marine Motor

We admit that we were "snowed under" with business all spring on this Model "D." It was to be expected. For two years now we have been making this engine so consistently good that they have been making good consistently. Every Model "D" sold has been a silent salesman—an engine that has made friends and sold more for us, in every conceivable class of work, in every type of boat—commercial, cruiser, speed boat or runabout.

An engine of proven quality at a price so reasonable as the **GRAY** price, brings business—tremendous business; so great, in fact, that for a time the big **GRAY** factory was swamped for many weeks. A well organized night shift was put to work to help catch up with the rush and has finally succeeded—you can now get immediate delivery of the most popular four cylinder, four cycle marine engine ever placed on the market.

The season is just beginning. Send for catalog with full details and prices at once. If you already have this information, **wire your order in detail to save time.**

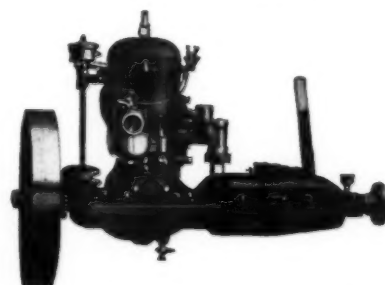
### Another Popular Member



10-12 H.P. Model "D" **\$158.00 up**  
Four Cycle

### Model "U"—2 Cycle

There's  
a Gray  
for  
Every  
Boat



Model "U" is Made in Four Sizes  
Single Cyl., 3 and 5½ H.P.  
Double Cyl., 6 and 11 H.P.

Complete Line 2 and 4-Cycle Marine Motors, 3 to 90 H. P., 1 to 6 Cylinders

**GRAY MOTOR CO., 674 GRAY MOTOR BLDG., DETROIT, MICH.**









# "SANDS" SANITARY FIXTURES

An assortment of small fixtures and specialties well adopted to Small Cruisers and Motor Boats



The "Frisco"—Plate S-2046  
(Design Patented—Copyrighted)

The "FRISCO" P. U. M. P. WATER  
CLOSET, extra heavy Vitro-Adamant  
Round Hopper Bowl. THREE (3) INCH  
supply and waste pump. All metal parts  
enamel.

Plate S-2045 Polished oak seat, no cover \$59.00

Plate S-2046 Polished oak seat with cover 60.00

Dimensions: Width, 34"; front to back, 20"; height, 17 1/2". Weight: Net, 80 lbs.; shipping, 120 lbs.



Plate S-126

The "Glossora"  
Composition flat  
way on cook, for  
use on supply  
and discharge of  
closets.

1/4 inch \$2.25  
1/2 " 3.00  
1 1/4 " 4.00  
1 1/2 " 5.00  
2 " 6.00  
Glass 2 1/2" and  
3" also made.

We recommend  
the use of non-  
corrosive with wiped  
lead or screwed  
joints as the safe  
and sanitary in-  
stallation for any  
pump closet.

"Knockabout"—  
Plate S-34

(Patented—Copyrighted)  
The "KNOCKABOUT" Improved  
Pump Water Closet, Vitro-Adamant  
round flushing rim bowl, 2 1/2" com-  
bined supply and waste pump.  
"Sands" patent automatic safety  
supply foot valve, and "Sands"  
patent backwater check valve.  
Pump rough, finished  
trimmings, oak seat  
and cover \$49.00  
Mahogany seat and  
cover, add 1.50  
Weight: Net, 45 lbs.; gross, 75  
lbs.  
Dimensions: Front to back 19";  
width 17 1/4"; height 14".



Prompt ship-  
ment from stock.



"Winner"—Plate S-2061

(Patented—Copyrighted)  
The "WINNER" Pump Water  
Closet, Vitro-Adamant Round Hop-  
per Bowl, 2 1/2" supply and waste  
pump.  
Plate S-2060 Fixture as  
described with oak seat. \$19.00  
Plate S-2061 Fixture as  
described with oak seat and  
cover \$20.00  
Dimensions: 30" front to back; 25"  
wide; 18" high. Weight: 50 lbs. net;  
60 lbs., shipping.

Plate S-2062

The "Angle"  
position Flanged Sea  
Valves, with  
straight couplings  
and locking plate,  
for use on the sup-  
ply and discharge  
of a sail pump  
closets.  
Price, per pair  
with strainer \$5.00  
for supply. \$5.00

"Bow" Closet—Plate S-2050

(Design Patent Applied For)  
The "BOW" Closet, Vitro-Adamant  
bowl, 2 1/2" pump, located at rear,  
stated with swing handle. Quick open-  
ing supply valve. Space occupied,  
15"x24".  
Pump rough, with finished  
trimmings, oak seat. \$30.00  
Dimensions: Front to back, 23";  
width, 14"; height, 12". Net weight,  
75 lbs.; shipping, 75 lbs.



Plate S-709  
All Brass Galley  
Pump, 1 1/2 in. Cylin-  
der, reversible  
handle with shut-  
tling cock.  
Polished \$2.50  
N. P. all over \$3.50



Plate S-4300  
Sands "Vol-  
ume" Bilge Pump,  
3 in. Cylinder  
28 in. long.  
Price with  
hose, no foot  
rest \$5.75  
Plate S-4303  
Same as de-  
scribed, but fit-  
ted with foot  
rest and 1" hose.  
Price \$7.75

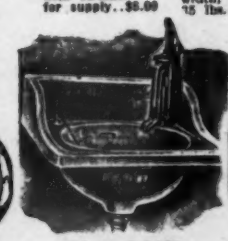


Plate S-3183

The "Maxator" 14" Vitro-  
Adamant Flid Back Lavatory,  
with N. P. Basin Pump  
and waste fittings. \$22.75  
no trap

Plate S-3180

The "Maxator" Lavatory, same  
as Plate S-3183, except with  
faucet, instead of Pump and  
with N. P. Fall \$13.25  
"8" Trap



Plate S-750-A

New Style Double-  
Acting Brass Bilge  
Pump, with foot at-  
tachment and 5-ft. dis-  
charge and suction hose  
with brass strainer.  
No. 1—1 1/2" diam., 15"  
long \$5.50  
No. 2—1 1/2" diam., 15"  
long \$6.50  
No. 3—2" diam., 24"  
long \$14.00

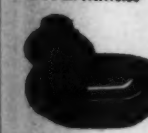


Plate S-132 1/2

Cast Bronze Comb-  
ination Teat Connection  
with Strainer and  
Hinge.  
1/2" L.P. \$2.25  
3/4" L.P. \$2.50  
1" L.P. \$2.75  
1 1/4" L.P. \$3.00  
1 1/2" L.P. \$3.25  
2" L.P. \$3.50

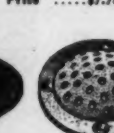


Plate 130 1/4-B

Cast Bronze Round  
Raised Strainer.  
2 1/2" \$0.35  
3" \$0.50  
4" \$0.65  
5" \$0.80  
6" \$1.00  
8" \$1.25  
10" \$1.50



Plate S-5200

Neptune Motor Boat Bow  
Lantern Bracket; hinges per-  
mit bracket to lie on deck  
when not in use.  
Polished Brass \$0.75



Plate S-5202

Universal Pol-  
ished Brass  
Lead.  
1/2" \$0.35  
3/4" \$0.50  
1" \$0.65  
1 1/4" \$0.80  
1 1/2" \$1.00  
2" \$1.25  
3" \$1.50



Plate S-5210

"Sands" Pol-  
ished Bronze  
Fender Hooks,  
with screws for  
1/4 in. rope. Price  
per doz. \$2.50

Large Assortment of Closets, Lavatories, Deck Plates, Ventilators, Portlights,  
Basin and Galley Pumps, shown in CATALOG "R," free upon application.

**A. B. SANDS & SON COMPANY**

"SIXTY-SEVEN YEARS OF QUALITY" 1916  
LARGEST MANUFACTURERS IN THE WORLD OF

**MARINE PLUMBING SPECIALTIES**

22-24 VESEY STREET, NEW YORK, U. S. A.

# LIGHT HO!



Equip that boat of yours with lights you can rely upon to give satisfaction under all conditions—lights that will burn steadily in a gale of wind without being blown out—that will not leak when stowed away—that will not rust out after exposure to the weather. To secure lights like these order from a house whose reputation for reliable merchandise is firmly established. Don't be satisfied simply to have lights that pass government inspection. Go further than this and insure that they are made from materials that will stand the hard test of daily service by ordering them from our

## 40-Page Catalog of Marine Supplies

We show two pages of standard approved marine lights in our Catalog of Marine Supplies. Because these lights are all equipped with Triplex Fresnel lenses of high efficiency they represent big value for the low prices quoted. Wizard Triplex Combination No. 98B17001, shown above, fulfills all the federal requirements for a combination light for Class One. Its cost is low. This light, and ten other styles, are described on pages 26 and 27 of our Marine Supply Catalog. This book also illustrates hundreds of other items of interest to every motor boat owner. In addition to illustrating and describing our line of two and four-cycle marine engines, this book shows propellers, marine hardware, a complete line of accessories for use around the engine, electrical equipment and supplies, signals, pumps, anchors and steering wheels.

Write your name and address on a postal card today and say:  
"Send me your free Catalog of Marine Supplies No. 90M33."



**SEARS, ROEBUCK AND CO.**  
CHICAGO

# Which Way Are YOU Going?

## A Worth-While Word to Buyers of Rowboat Motors

A man who started out in his boat to go to a town some distance away soon came upon a stream that branched off the main waterway. It was a pretty little stream, and it so interested the man in the boat that he decided he'd follow it instead of the course he'd taken. When he suddenly realized he was headed the wrong way, it was too late to get to the town in time.

Some persons do their buying like the man in the boat did his traveling. They're lured by side issues. They forget where they're going. They lose their way.

### Know Your Goal—Keep it in View

When you set out to buy a rowboat motor, remember there's one all-important quality without which everything else counts for little. That quality is *reliability*. Keep it in mind always. Don't get so interested in some minor feature that you lose sight of it, for advantages which are of secondary importance can be made to appear paramount to the inexperienced buyer.

The reliable motor will start when you're ready and not stop till you say the word. It will be "on the job" rain or shine, today, tomorrow, next month or next year.

Reliability doesn't spring from one or two features. It is the result of through-and-through excellence. And it is found only where the question of first cost has been subordinated to that of last cost.

### Where Dependability is First Aim

Ferro motors are built with careful consideration of every single part from fly wheel to rudder. The castings are moulded in the Ferro plant along with Ferro "V" Type Automobile Motors, Ferro 4-Cycle and 2-Cycle Marine Engines, and cylinders and crank cases for many of the best known motor cars.

To insure dependable ignition there is a Bosch magneto. A standard float-feed carburetor is used instead of the ordinary mixing valve. Lubrication and cooling have been given close attention. In short, not a detail that would contribute to reliability has been omitted.

When you buy a Ferro, you can be sure you've not "lost your way."

Write for catalog today.

**The Ferro Machine and Foundry Co.**  
610 Hubbard Ave. Cleveland, Ohio

PRICE:

\$85 with Bosch high tension magneto.

\$65 with waterproof batteries.



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*Serves More People in  
More Ways than Any  
other Institution of  
its kind in the world*

## Johns-Manville Fire Extinguisher



### Aim it with both hands

Fire decides its own point of attack. Usually it picks the hard-to-get-at spot—under the deck—down in the bilge around the engine and tank where it is often difficult and sometimes impossible to pump and aim an extinguisher at the same time.

In such cases, you can aim the J-M with both hands on the barrel, because it is built on a principle that permits pumping first and then discharging.

Just a few strokes of the pump—then open the nozzle and, with the pressure thus created, aim a steady stream straight at the base of the flame.

J-M Extinguisher Fluid is deadly to any incipient fire of gasoline, oil or electrical origin. It is a non-conductor of electricity and is harmless to skin, fabric and operating mechanism. It is the only liquid that is recommended and guaranteed for use in the J-M Extinguisher.

The J-M is labelled by the Underwriters' Laboratories and included in the list of approved fire appliances issued by the National Board of Fire Underwriters. Write for booklet. If your dealer cannot supply the J-M Extinguisher, we will send you name of nearest dealer who can.

### Attention! Dealers

The J-M trade policy excludes all but recognized dealers; puts every dealer on an equal footing; protects your market and profit and removes the temptation of price cutting.

Liberal discounts regardless of size of order, permitting small stocks, more rapid turnovers and larger net profits.

Reap the benefits by ordering from your jobber today. If he cannot supply you, write the nearest J-M branch.



## H. W. Johns-Manville Co.

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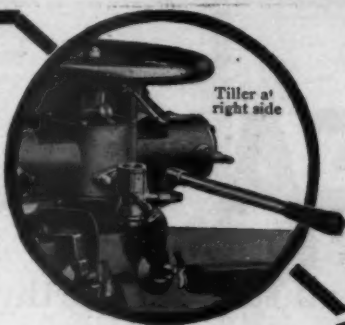
296 Madison Avenue, New York City

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THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED.  
Toronto Montreal Winnipeg Vancouver



**T**ILLER at right hand side permits use of entire rear seat. No other rowboat motor has this excellent feature. New Tilting Device enables you to lift motor clear of water without detaching from boat when in shallow water or weedy spots.



Tiller at right side

## Unmatched Speed No Vibration

*Absolutely dependable—Easy to start—Simple to understand and simple to run and manage—Nothing complicated—Without question the finest rowboat motor made*

## The Great KOBAN ROWBOAT MOTOR

The Original 2-Cylinder Rowboat Motor

### A Wonderful Engine

All revolving and reciprocating parts perfectly balanced, quiet, smooth running, lighter than most single cylinder types. Handsome design. New features include tilting device, tiller at right side aeroplane type magneto, simple automatic reverse and many others.



Built-in Magneto or Battery Ignition

### Does Not Shake the Boat

Vibration is entirely eliminated by opposed cylinders that fire at same time. Reverses by simply pressing button. Runs perfectly at trolling speed or can skin the average launch on high speed.

### A Wonder for Speed

"No other rowboat motor can come within 4 miles an hour of my Koban."—Chicago, Ill.

"Other makes of rowboat motors are not to be compared with it."—Eureka, Cal.

It's a real motor—built on sound engineering lines.

Write for free illustrated 24-page catalog. Agents and dealers wanted.

**Koban Mfg. Co.,** 246 South Water Street  
MILWAUKEE, WIS.

Our line also includes a 2-cylinder, 3 H.P. vibrationless inboard marine engine for small launches, canoes, etc.



## REST on AIR

Take advantage of the peculiar qualities of air—the cheapest yet the most valuable thing in the universe. Use it for the cushions and mattresses on your boat. If you get good ones in the first place you will find this kind the most satisfactory type you can buy.

## METROPOLITAN AIR GOODS

Under the trade name of METROPOLITAN AIR GOODS we are manufacturing a complete line of high grade air cushions and mattresses for motor boats and yachts. They combine the particular marine advantages of air filled cushions with the finest of materials, workmanship and finish.



Zephyr Air Cushion

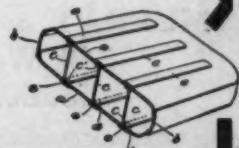
Metropolitan Air Goods insure the highest degree of comfort. They are invaluable for life preservers and for this reason alone should be used on every boat.

These cushions are extremely light and perfectly sanitary. Built to wear like iron and will last indefinitely with ordinary care.



Double Zephyr Cushion

The sectional cut shows the exclusive patented construction of all Metropolitan Air Goods. The web stays sewed to the top and bottom insure durability and keep the cushion in shape. Patents owned and controlled by the Athol Mfg. Co.



Metropolitan Air Goods are made in all sizes and styles in stock patterns, or manufactured to order from specifications. Prices depend upon size

and covering material. Ask your dealer or write today for complete illustrated catalog.

We also carry a complete line of KAPOC FLOSS CUSHIONS, "NO SINK" CORK AND FLOSS CUSHIONS, and PNEUMATIC GOODS for every purpose.

**ATHOL MFG CO** 71 CHESTNUT HILL AVE  
ATHOL MASS

**VIPER**

Trade Mark Reg. U. S. Pat. Off.

**SEA SLED**

Trade Mark Reg. U. S. Pat. Off.

# VIPER SEA SLED

**HICKMAN PATENTS:****The successful principle for all fast, seaworthy boats**

The fastest cruising cabin motor boat afloat.  
36' x 8' cabin sea sled. Weight, 6 tons. Horsepower, 350.

**SPEED ON FIRST TRIALS, 34 MILES PER HOUR.  
ACTUALITY, NOT ANTICIPATION.**

[The cruiser speed record established at Miami in February was 24.38 miles per hour.]

We have had running throughout the winter, in the open sea a 10-ton boat carrying the weight of torpedo and gun. Speed on navy trials 40 miles.

*Actuality, not anticipation.* Which is, being translated:—*We have done these things; the other chaps have talked about them.* Send for bulletins

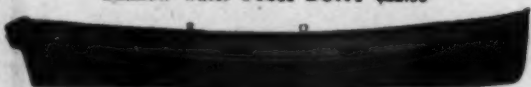
**MURRAY & TREGURTHA CO.**  
340 West First Street  
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**VIPER CO., Ltd.**  
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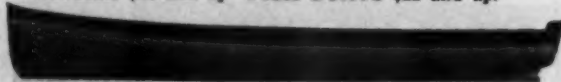
## Get Your Boat At Factory Price



Shallow water FISH BOAT \$22.00



Rowboats \$18 and up—FISH BOATS \$22 and up.



Rowboats built and designed for Detachable Motors \$35.

**We** ship to you direct, eliminating agents' and dealers' profits. Our 16, 18 and 20-foot launches are guaranteed to stand the test of comparison in grace and symmetry of design, in substantial construction, in reliability of material and in perfect finish with boats that are selling at prices 25 to 50 per cent higher.

### Thompson's Boats

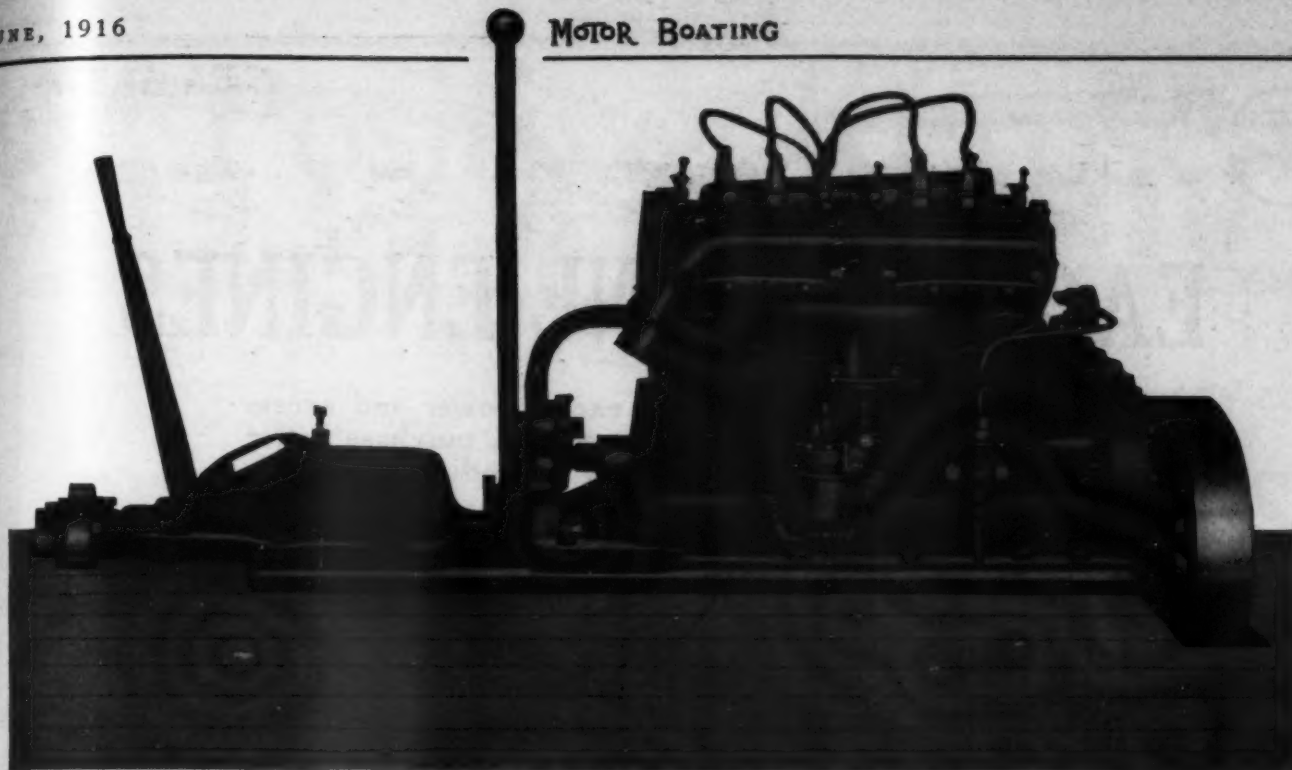
All kinds of boats, all guaranteed and all at a big saving in price. Our rowboats for detachable motors are extra well built to stand the vibration—they ride swiftly and with ease and grace.

For small additional charge we supply Runabout Launches with or without engines, built semi-tunnel. Write for free catalog showing full line—motor boats, canoes, rowboats, launches. Address.

**THOMPSON BROS. BOAT MFG. CO., 35 Ellis Avenue, Peshtigo, Wis.**

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Advertising Index will be found on page 40.





There Are No After-Thoughts on This Engine

## THE ARISTOCRAT

9-12 H. P.

4 Cylinder

4 Cycle

*Has Reached the Acme of Perfection  
In Marine Motor Design*

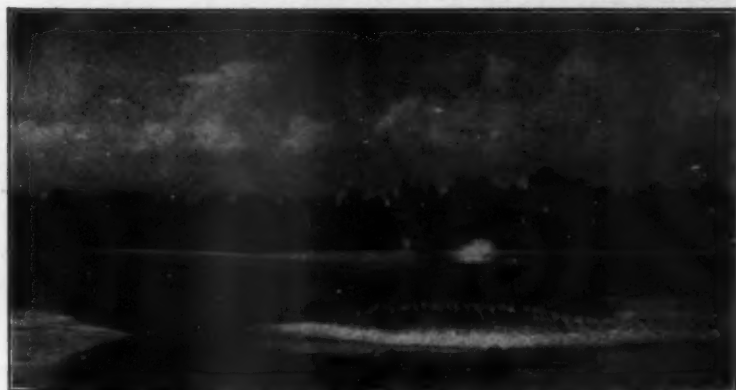


*Patented Starter*

A girl can start the Aristocrat and operate it as easily as an engineer. Our patented starter is a perfected device that never fails.

IT is a high-class little engine, up-to-the-minute in design, built to suit men who are used to high-grade, expensive big engines. Controls perfectly at any speed from 300 R. P. M. up, developing 12 H. P. at about 1500 R. P. M.

It's light, compact, quiet, free from vibration, smooth running and remarkably fast and powerful for its size. Drives a 28-footer 10 miles per hour, or a 16-footer 22 miles per hour. Dixie High Tension Magneto, Kingston Carburetor, Standard Reverse Gear, Lobee Water Pump, Sight Feed Oiler, Water Jacketed Exhaust—all the best of their kind.



Making Spray with an "Aristocrat."  
20 miles per hour in a 19-footer.

### Aristocrat Prices

Due to our foresight in contracting for materials when prices were lower, also to increased quantity production, improved factory methods and the installation of new, modern multiple-production machinery, we are in a position to quote exceptionally low prices for a motor of the Aristocrat quality.

*Write today for Prices and Copy of  
Our New Catalog*

*Good Proposition  
for Live Agents*

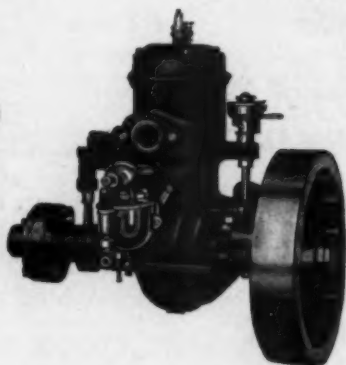
**CARSON MOTOR CO., 654 Franklin St., Detroit, Mich.**

# EAGLE MARINE ENGINES

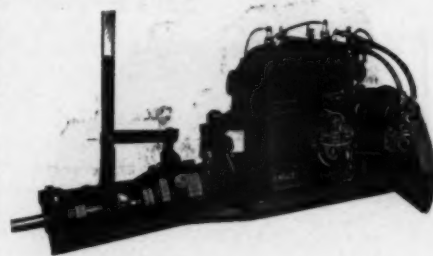
The popular priced line with excess power and excess value. You never had, and never will, purchase better value for your money than that offered you in every "EAGLE" Engine.

## DO NOT PROCRASTINATE

1916 promises to demand more engines than there are facilities to produce. Manufacturers cannot purchase raw materials and deliver goods as promptly as in the past. There has been an evolution in business, resulting from enormous demands for all kinds of products, with the result that to go in the market today and attempt to secure supplies is almost impossible. Therefore, arrange for your engine requirements *early*, and be sure to arrange with a manufacturer who is likely to render you satisfactory service. You will find it more important than ever this year to use discrimination as to your source of supply.



It appears almost useless for us after 17 years of continuous national advertising and with a business record unsurpassed, to place our merits before you for consideration at this time, nevertheless there are a few of the better class dealers that we feel should be associated with us and selling the most complete and up-to-date line of 2-cycle engines on the market.



We have a large and varied line to choose from. Our popular-priced high-speed Models have no competition. They are in a class by themselves. They hold all records for speed and horsepower development and their construction is of surpassing quality.

Our Medium-Speed line of Engines is too well known to require any special mention. They have been a standard for 8 years, and the durability of this line is known all over the world, having shipped them to practically all foreign countries.

The Heavy Duty "EAGLE" Engine, for work boats and auxiliary purposes, cannot be improved upon. There are engines of this type in service that have been used continuously for 16 years, which is sufficient evidence of their value.

*Therefore, we address ourselves to the live dealer, to the dealer who has an established business, who is sufficiently alert to grasp the importance of representing an established popular line and who realizes the importance and value of an association with an established house.*

## THE STANDARD CO., TORRINGTON, CONNECTICUT



# A Positive Kerosene SUCCESS

WE ANNOUNCE, after several years of extensive experimental work, the thorough success of our Kerosene Device for use on

## PEERLESS MARINE ENGINES

The use of kerosene for motor fuel, long predicted and earnestly desired by thousands of engine owners, is at last a reality. Owing to the many disappointments of unperfected kerosene devices in the past, the following statements about Peerless Kerosene Engines are confined absolutely to the results of engineering tests already made. They can be accepted as positive facts, subject to proof before anyone who cares to investigate.

### Fuel Cost Reduced from 60% to 80%

**POWER**  
Reduced Only 8%

**FUEL CONSUMPTION**  
Less than One Pint per H.P. Hour

**RELIABILITY**  
Equal in Every Respect to Gasoline

The Peerless Kerosene Equipment provides for use of either kerosene or gasoline on the same engine, one entirely independent of the other. A model "L" Schebler Carburetor is used for the kerosene, and a Model "D" Schebler for gasoline. The engine can be started and warmed up on gasoline, then instantly switched onto kerosene while under full load, without a perceptible change in the operation of the engine. Or it can be run on a combination of any proportions of gasoline or kerosene, both fuels being controlled by a single lever.

Fuel expense for this engine is only one-fifth to two-fifths of the cost of running the same engine on gasoline. As the power developed is practically the same, the importance of this saving cannot be denied, whether for

commercial boats or pleasure. And no advantages are sacrificed—no disadvantages acquired—in securing this remarkable economy.

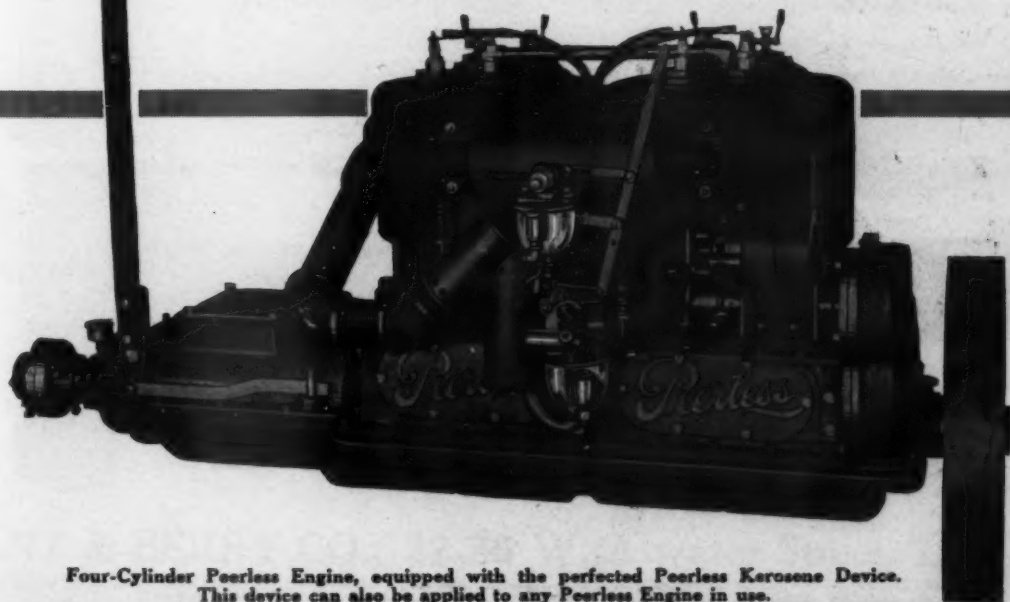
#### No Smoke, Perfect Lubrication, No Excessive Carbon Deposits

The kerosene is so thoroughly vaporized before it enters the cylinders that combustion is perfect. It burns clean, without smoke, odor or excessive carbon deposits. Lubrication is not affected in the slightest by the use of kerosene.

We supply this perfected kerosene equipment on all models of Peerless Engines, from eight to fifty horsepower. It can also be applied to the Peerless Engines now in use.

*Write today for full information, prices, and ask us any questions you wish. You will be interested in the facts about this kerosene device, no matter what engine you own.*

**Peerless Marine Motor Co.**  
No. 10 Lock Street, Buffalo, N. Y., U. S. A.



Four-Cylinder Peerless Engine, equipped with the perfected Peerless Kerosene Device. This device can also be applied to any Peerless Engine in use.

*When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating. Advertising Index will be found on page 40.*

# WINTON

## More Power at Reduced Cost

That Winton Engines are the most quiet in their operation, the least vibratory and require less attention than other heavy duty engines are facts proved by the performance of engines in the service of owners who have had wide experience with engines in general.

Of a design, exclusively Winton, that provides for proper proportions in and perfect balance of all parts and constructed in accordance with Winton methods, which have long been associated with quality products, makes possible a degree of refinement of operation that is found in no other engine.

It naturally follows that the mechanical efficiency of an engine that is perfectly balanced, wherein frictional losses are reduced to the minimum and every possible means utilized to promote easy operation, should be of a high order, and in this respect Winton engines have proved exceptional as power producers and show remarkably low operating costs.

Therefore, quite aside from being a fine machine from the standpoint of the owner who appreciates the degree of perfection it represents, it is finer still in the respect that it gives the greatest possible return in power and economy.

### WINTON ENGINE WORKS

2116 West 106th Street  
Cleveland  
Ohio



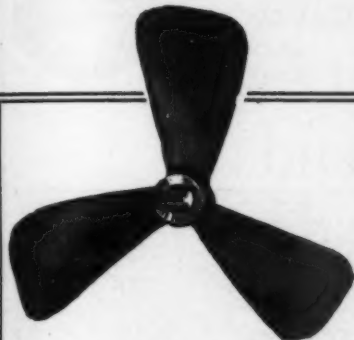


# Race Yourself with a



## B & B Propeller

### "The Wheel that Leads" in the United States



One to Three Miles per Hour Increase of Speed Guaranteed. This is a definite promise, not merely an advertising slogan. It isn't magic or chicanery either.

Simply this—we've found that the proper B & B Wheel will give one to three miles increase over the average wheel in service, so we're willing to base every sale on the fulfillment of this guarantee.

We take the risk of proving that you need a B & B Propeller. If you don't, we are cheerful losers. Give us the chance to try it.



We propose a new form of sport for motor boat owners—a sport that will prove as interesting as any race they ever entered. And it will prove the most profitable contest they ever tried for ninety-nine out of every hundred contestants.

Tune up your engine, clean the plugs, adjust the carburetor, fill up the oiler, then go out and make the best time record you can between two known points some distance apart.

Then put on a B & B Propeller of the size and pitch we recommend for your boat. Over the same course, with conditions as near identical as you can make them, this test will show you how much extra efficiency you get at no extra cost with a B & B Wheel.

Motor boating with a slipping wheel is like running a foot race on a waxed dance floor. You waste power. Not all wheel troubles are due to excessive slippage, either. But we have solved them all.

B & B Propellers are technically correct, made of the finest materials by a firm of international standing. They are best for launches, speed boats, cruisers, tow boats—all types. The name is stamped on the hub of every genuine B & B Propeller.

Write us a candid letter about your boat, its size, power, revolutions, construction of boat, speed, present wheel equipment, etc. We'll tell you our honest recommendations and send prices without any obligation on your part. Write today.

**BRYANT & BERRY CO., 32-36 W. Atwater Street, DETROIT, MICH.**

EASTERN REPRESENTATIVES: E. J. Willis Co., 85 Chambers St., New York, N. Y.  
CANADIAN SALES AGENTS: Canadian Fairbanks-Morse Co.

WASHINGTON AND ALASKA DISTRIBUTORS: S. V. B. Miller, Seattle, Wash.  
SOUTHERN REPRESENTATIVE: Woodward Wight & Co., New Orleans, La.

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## IS THERE SAFETY AFLOAT IN YOUR BOAT?

Suppose fire attacks your boat a mile from shore—with your wife and child aboard? What can you do to save them?

Nothing—with only sand and water in the boat.

There's but one way to keep safe afloat — *never leave shore without Pyrene.*

Pyrene kills oil and gasoline fires, the worst peril of motor boating.

The law requires a Fire Ex-

tinguisher. Safety demands Pyrene.

Approved by the U. S. Steamboat Inspection Service. Inspected, approved and labeled by the Underwriters' Laboratories, Inc. Sold by marine, auto supply and hardware dealers.

Nearly 1,000,000 now in use.

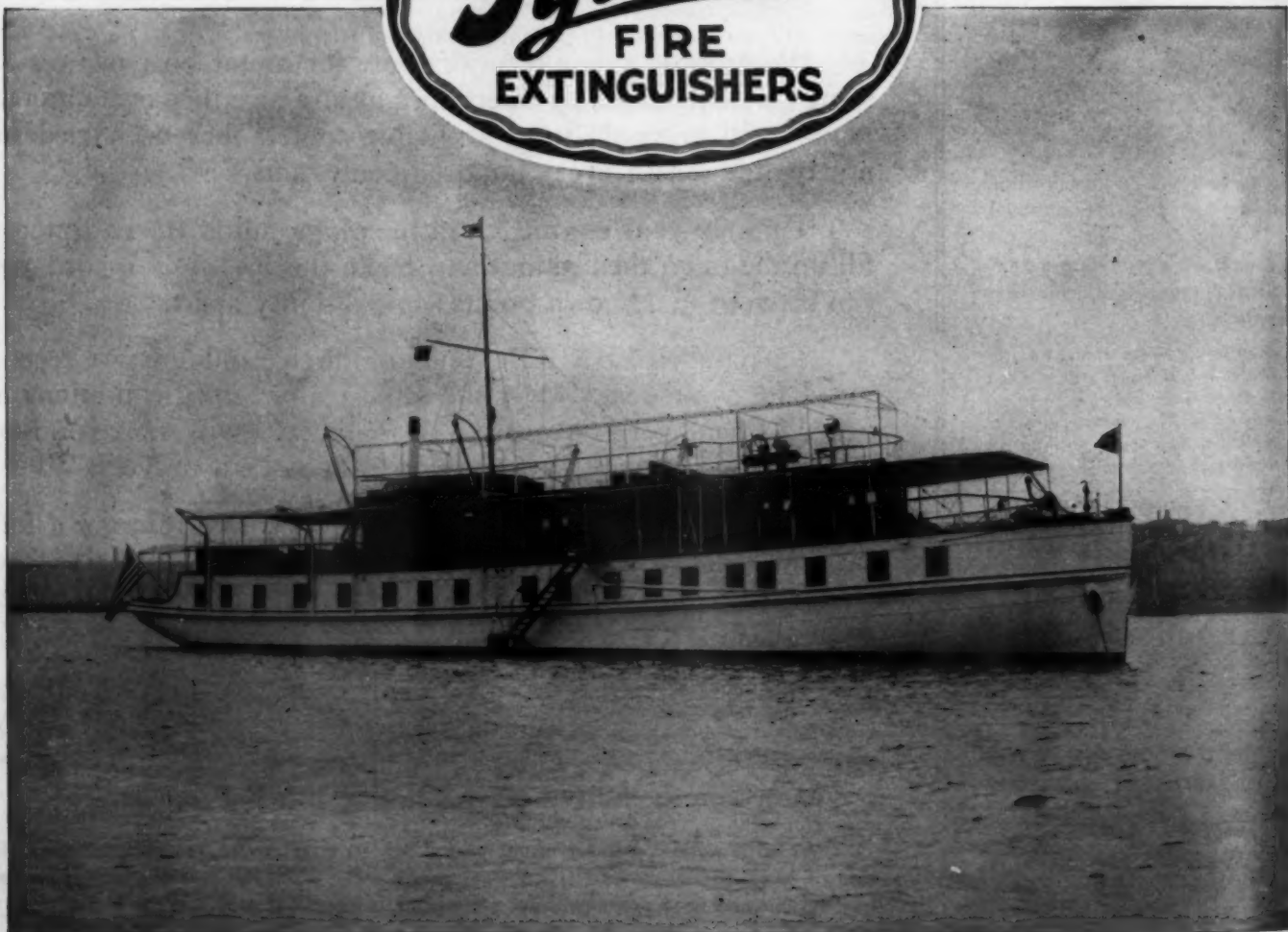
\$7.50 each, complete with bracket.

Write for booklet telling how to prevent motor-boat fires.



PYRENE MANUFACTURING CO., 52 Vanderbilt Avenue, New York City

There's Safety Afloat with Pyrene in the Boat





# 132.4%

The sales of the Scripps Motor Company during the first four months of 1916 *exceeded* the total sales for the same period of the best previous year in the history of the company by 132.4 per cent.—a condition not unexpected by those who have studied the specifications of the series B Scripps.

## SCRIPPS MOTOR COMPANY

631 Lincoln Avenue  
Detroit, Michigan

120 Broadway  
New York City



**\$460**

Standard Type. Iron base and crank case, for heavy and medium duty work, speed 200 to 900 R.P.M.

**\$550**

High Speed Type. Aluminum base and crank case, for fast launches and hydroplanes, speed 200 to 1500 R.P.M.

**Price includes Magneto, Joe's Reverse Gear and all usual motor equipment**

To the undisputed Erd Quality we have added the undisputed superiority of Valve-in-Head design. And by producing these motors in the quantities warranted by the long standing Erd demand we have been able to reduce the manufacturing cost to a point which permits the exceptionally low prices quoted above. If exact figures were obtainable, we believe this particular Erd model would be found the most popular marine motor of its size and type on the market.

We have been building Erd Quality Marine Motors for seventeen years. When we built two-cycle motors exclusively these Erd motors were known to be among the fastest, sturdiest and most satisfactory two-stroke motors made. We still make these two-cycle motors in Standard and Featherweight types, and sell great numbers without even advertising them, so great is the value of their past reputation. Many a race has been won by these Erd motors.

When we introduced our first 4-cycle motors of the L-head type, their clean cut lines, great fuel economy and steady power quickly built up a ready sale for them. Not satisfied to rest on this success we proceeded to adopt and adapt the many advantages of Valve-in-Head construction for these motors. After a season of wide general use we do not see where there is room for improvement. But when we discover such a possibility it will be immediately worked out and offered to our large clientele of Erd patrons.

*Tell us about your boat, what speed you want and let us submit a proposition that will interest you.*

**ERD MOTOR COMPANY, Saginaw, W. S., Michigan, U. S. A.**



# COLUMBIAN



## THE RIGHT WHEEL FOR ANY TYPE OF BOAT

The right wheel must have the right **BLADE SURFACE**. The Columbian is the only complete line with **EVERY REQUIRED BLADE SURFACE, DIAMETER AND PITCH**. **COLUMBIAN QUALITY MEANS MAXIMUM EFFICIENCY.**

The superiority of

## COLUMBIAN MANGANESE BRONZE

is conclusively proven by the following recent tests:

	Test No. 0.	Test No. 1.	Test No. 9.	Test No. 21.
Breaking strength per square inch.....	76,000 lbs.	74,500 lbs.	69,900 lbs.	71,750 lbs.
Elastic limit per square inch.....	38,000 lbs.	36,000 lbs.	35,500 lbs.	36,750 lbs.
(Pull required to start stretching.)				
Elongation in two inches.....	30%	26%	39%	37%
(Amount of stretch before breaking.)				

(Tests made by Dr. Chas. F. McKenna Laboratory, 50 Church St., N. Y. C.)

The United States Government requires:—Breaking Strength, 65,000 lbs.; Elastic Limit, 30,000 lbs.; Elongation, 20%.

## INSIST UPON A COLUMBIAN

AND YOU WILL INSIST UPON THE BEST

Write for **PROPELLERS IN A NUT-SHELL**, sent free upon request.

**COLUMBIAN BRASS FOUNDRY, 218 North Main Street  
FREEPORT, NEW YORK**

New York Branch for Local City Sales Only: Concourse, 50 Church St., New York City

### PEERLESS PROPELLERS

Meet the demand for lower prices.

Made in Rocket, Arrow, Reliance and Ailsa-Craig Types.

They do not carry the Columbian Trade Mark, but they are guaranteed sound, and are accurate as to pitch.

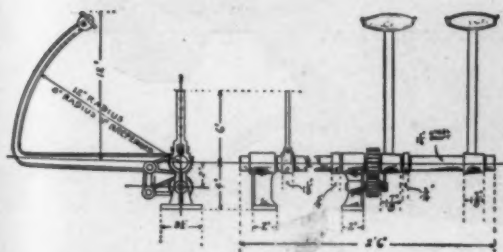
We consider them better in design, material and workmanship than most advertised **HIGH GRADE** propellers.

Ask for Peerless Price List.

Every genuine Columbian Propeller carries this Trade Mark



LOOK FOR IT



### COLUMBIAN

#### FOOT REVERSE CONTROL

Operate your reverse gear with your foot.

#### COLUMBIAN UNIVERSAL STRUTS

Are the Best at Prices No Higher

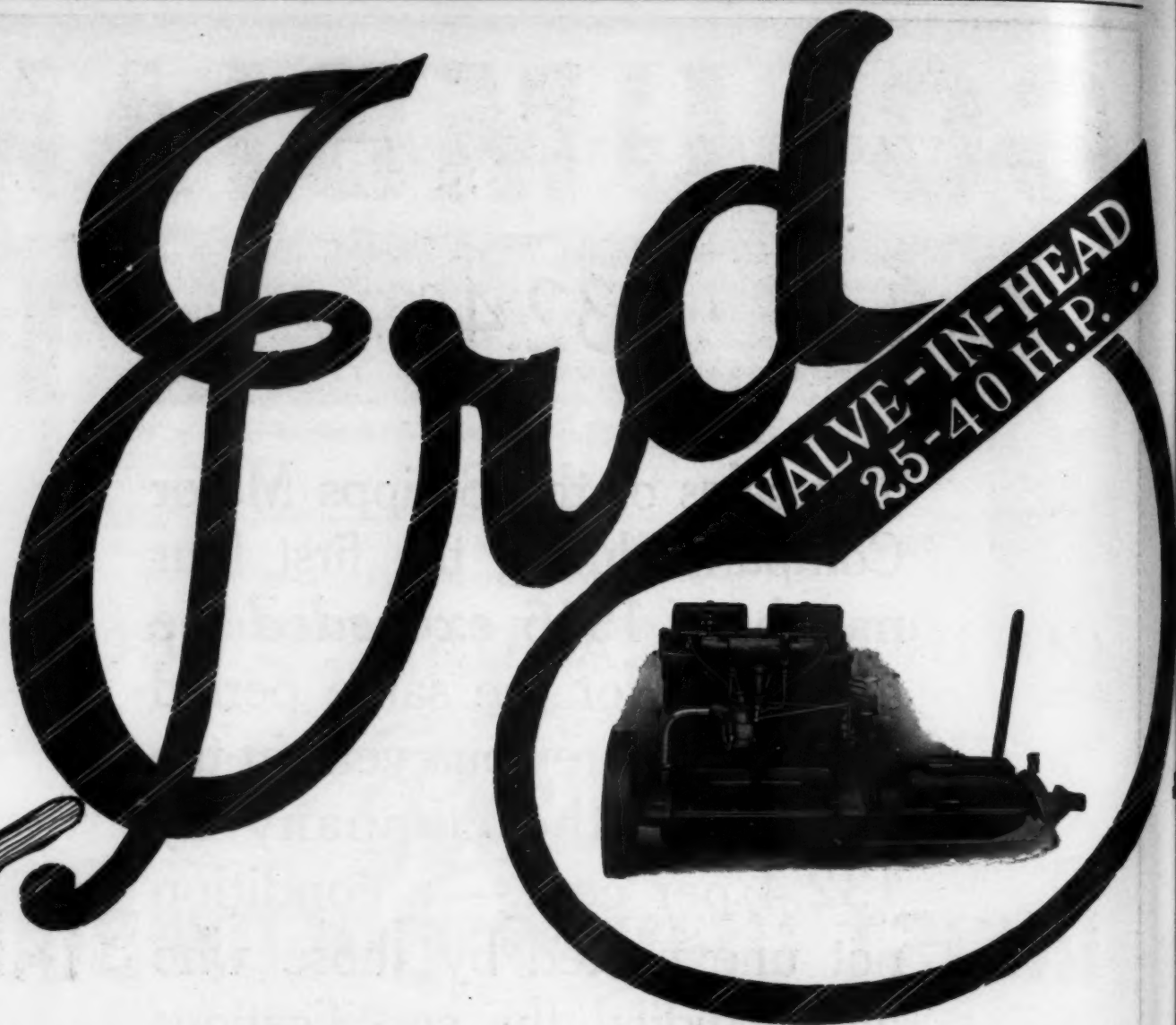
Rudders of All Types.

50 Different Patterns.

We have something special for your boat.



**UNIVERSAL  
STRUTS  
SELF ALIGNING**



**\$460**

Standard Type. Iron base and crank case, for heavy and medium duty work, speed 200 to 900 R.P.M.

**\$550**

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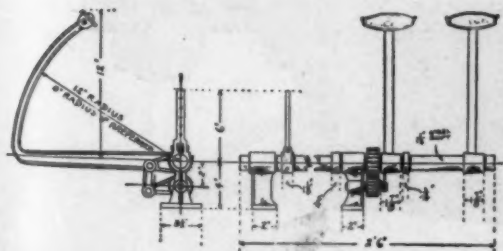
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Ask for Peerless Price List.

Every genuine Columbian Propeller carries this Trade Mark



### COLUMBIAN

#### FOOT REVERSE CONTROL

Operate your reverse gear with your foot.

#### COLUMBIAN UNIVERSAL STRUTS

Are the Best at Prices No Higher

Rudders of All Types.  
50 Different Patterns.

We have something special for your boat.



**UNIVERSAL  
STRUTS  
SELF ALIGNING**

# PARAGON REVERSE GEARS

*of this enclosed type make cleaner boats*

**T**HE enclosed model of the well-known Paragon is the first step toward freedom from oil and grease. Every part is enclosed and the top of the housing may be removed in a few seconds.

Ask to have your new motor equipped with this enclosed Paragon or ask our nearest agent to suggest the proper size for that boat of yours.

*Write for Circular*

**PARAGON GEAR WORKS**  
EVANS STAMPING & PLATING CO.  
Cushman St., Taunton, Mass.

## Manufacturers Using Paragon Reverse Gears

Anderson Engine Co.  
Bridgeport Motor Co.  
Buffalo Gasolene Motor Co.  
Clay Engine Co.  
H. C. Doman Co.

Fairbanks-Morse & Co.  
Frisbie Motor Co.  
Fulton Manufacturing Co.  
Gray Motor Co.  
Hall Gas Engine Co.  
Hettinger Engine Co.

Holmes Motor Co.  
Kermath Manufacturing Co.  
Lamb Engine Co.  
J. W. Lathrop Co.  
Geo. Lawley & Son Corp.

Loane-Trask Engineering Co.  
Mason Machine Works  
Mercury Motor Co.  
Mianus Motor Works  
Missouri Engine Co.  
Red Wing Motor Co.

Regal Gasoline Engine Co.  
Scripps Motor Co.  
Sloane-Daniel Motor Co.  
The Standard Co.  
The Stanley Co.

Teel Motor Co.  
Van Blerck Motor Co.  
Vim Motor Co.  
Wisconsin Motor Mfg. Co.  
And Many Others.





# A Message of Service

- ¶ The wise manufacturer considers first what he can do for his client rather than what his client can do for him.
- ¶ We recently received a letter from a client who has had one of our engines ten years. He says, "It is still so good I am going to put it in my new boat."
- ¶ For sixteen years this Company has enjoyed an enviable reputation for absolutely fair dealing with its clients.
- ¶ Because we are makers of both engines and boats we are able to study mechanical problems from every angle.
- ¶ Among those who buy of us are some of the most prominent men and women in the country, socially, financially and mechanically.
- ¶ The scarcity of material the past six months affects everybody. Send us your order NOW.
- ¶ Our aim always has been to make quality the first consideration.
- ¶ The reliability and durability of our engines and the comfort and elegance of our boats have won for us the good-will of both clients and competitors.
- ¶ We have kept abreast of all improvements without being led away by fads and freaks in design or model.
- ¶ We have received many compliments on our success in pleasing clients who were more than usually particular.
- ¶ We do not believe in making claims which we cannot substantiate, and we are frequently told by purchasers that they are more pleased than we led them to expect.
- ¶ Our engines are designed for severe and continuous service. Their installation and operation are simple and their equipment complete and of the best.
- ¶ Our boats are beautiful and practical in design and their construction as perfect as day labor and vigilant superintendence can produce.
- ¶ Reliability of output, prompt service, and unfailing courtesy are cardinal principles of our organization.

*"None Better Built"*

**FAY & BOWEN ENGINE CO.**

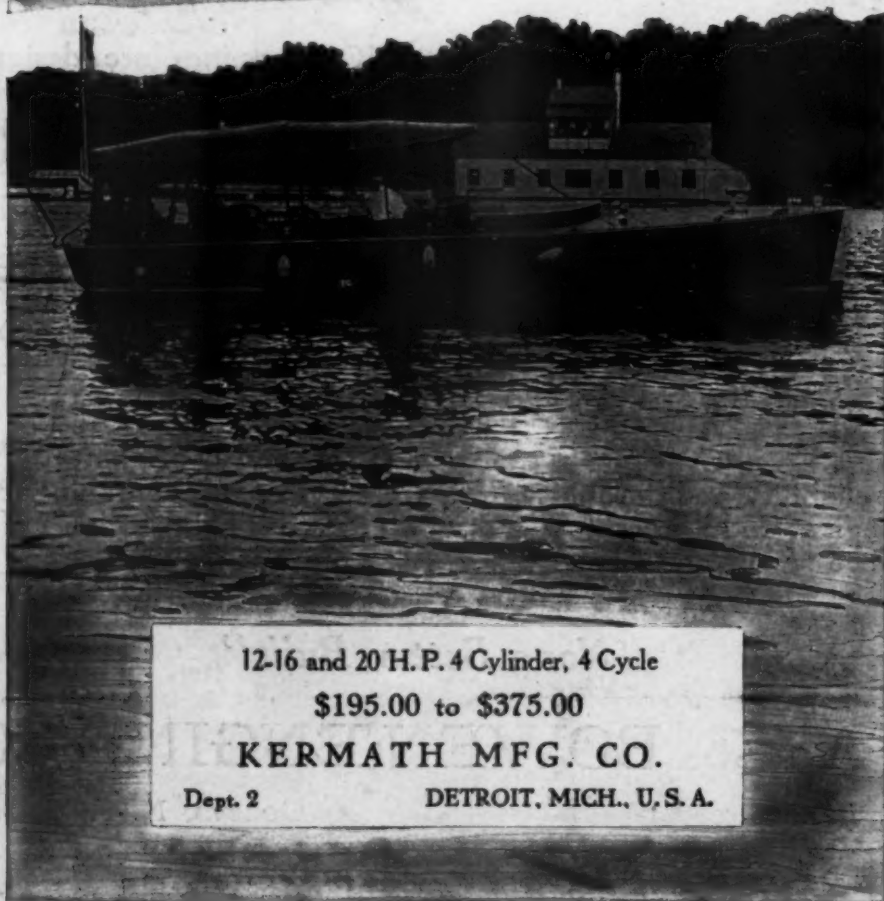
104 Lake Street

Geneva, N. Y., U. S. A.

Our engines are made for Canada by the  
St. Lawrence Engine Co., Ltd.  
Brockville, Ont.

# KERMATH

AMERICA'S STANDARD  
FOUR CYCLE  
MARINE MOTOR



12-16 and 20 H. P. 4 Cylinder, 4 Cycle

\$195.00 to \$375.00

KERMATH MFG. CO.

Dept. 2

DETROIT, MICH., U. S. A.



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